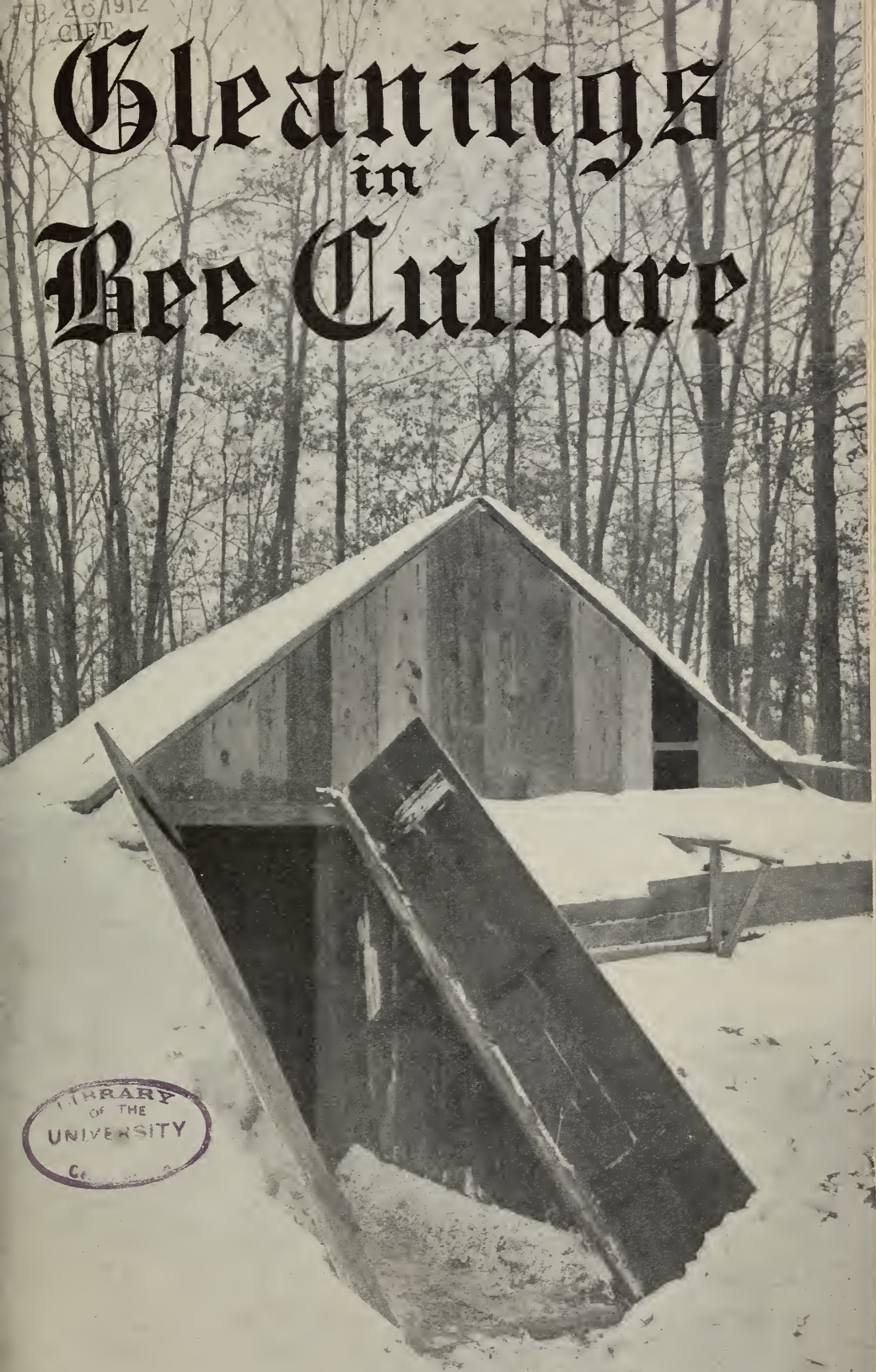
Gleanings in Bee Culture



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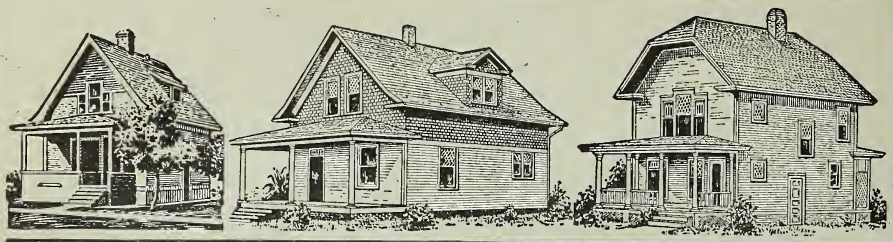

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Gleanings in Bee Culture

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Editorial

There will be a meeting of apiary inspectors, and others interested, at Amherst, Mass. See special announcement on p. 25.

We expect to have in our next issue something more to say on the subject of putting lime in the soil to make clover grow on land that has hitherto been considered "clover-sick." Clover in the years gone by has used up the lime in some soils, and it is now time to replace it. It can be done very cheaply.

THE OHIO STATE BEE-KEEPERS' CONVENTION.

The attention of Ohio bee-keepers is directed to the program of the Ohio State Bee-keepers' convention, to be held at Springfield, O., Feb. 21, on page 25 of this issue. Entomologist Shaw, chief foul-brood inspector, will be present. An effort has been made to get Dr. E. F. Phillips, of the Bureau of Entomology, to come also. This will be an interesting and important meeting. We expect to be present ourselves, and hope that all bee-keepers who can will make an extra effort to attend.

SPECIAL NUMBER ON AUTOMOBILES.

We are now planning to have our April 1st issue a special number devoted to the interest of the bee-keeper who owns an automobile, or who intends to purchase one. There have been many requests for this; and for the past few months almost every mail has brought us letters of inquiry from prospective purchasers. We are always glad to give information regarding different machines when we can; and in order to call out the experience of others we have planned this special number. We already have several interesting articles on hand, together with some good illustrations; but we are anxious to get a good many more. Let all those who own machines tell why they bought them, whether they are profitable from a business standpoint, etc.

What machine do you own, and why did you get it? Has it proven satisfactory? If you have owned it as long as a year, what has been your expense for repairs?

We are especially anxious to get photographs of various machines in use. We shall expect to pay for all contributions used, especially where photographs are sent that can be reproduced.

SENDING HONEY OR OTHER COMMODITIES BY FREIGHT OR EXPRESS; A FEW FACTS TO REMEMBER.

A short time ago a subscriber wrote us that he had shipped some honey to a commission house, and could get no returns. The case was something like this:

The commission house, it seems, made this bee-keeper an offer for his honey delivered in their city. The bee-keeper did not accept the offer, as he said it was too low. He wrote back that he would have to have more money than they had offered. He received a letter from the commission house, accepting his figures. The honey was shipped; but on arrival it was found to be badly broken down. The commission house would make no returns, and the bee-keeper finally appealed to us. We replied by saying that if he, the bee-keeper, had accepted the price offered by the commission house, f. o. b. city of the commission house, he would be compelled to accept whatever terms of payment the commission house could make, after making reasonable allowance for breakage; that his only recourse would be to put in a claim against the railroad company for the difference between what he received and what he would have gotten if the shipment had not been damaged; but as the commission house had accepted the honey f. o. b. station of the bee-keeper, it was up to them to make full returns on the basis agreed upon, and then enter claim for loss against the railroad company.

The moral of this whole thing is, that it is to the interest of the bee-keeper to have the honey delivered into the hands of the railroad company of *his own town, and no further*. It is equally obvious that it is to the interest of the buyer to secure, if he can, delivery of honey to his city.

There is one other point to be considered, however, and that is this: If the bee-keeper puts up his honey in a careless and improper manner, neither the buyer nor the rail-

road company could be compelled to pay the full loss, if they paid any thing. The loss would then fall on the producer. It is, therefore, important that the bee-keeper put up his honey in the most approved style, using modern well-made shipping-cases; and if he can prove that the honey was delivered at the railroad station in good order, any loss or breakage in transit can then be recovered from the railroad company by either the consignee or shipper.

Another case arose some little time ago. A bee-keeper shipped his household goods from a southern city to a northern. He prepaid the freight to the agent at the starting-point, which was $12.00. This charge was based on an estimated weight of the goods. When the goods reached the northern city the agent at destination demanded $3.85 more, which was paid. A short time later the railroad company demanded $5.50 more. The bee-keeper demurred, and wrote to us, asking for his rights in the matter, saying that the railroad company threatened that, if he did not pay, he would be held liable to a fine of $3000 and a term in the penitentiary. He was willing to pay what was right, but he did not propose to be imposed on.

We replied, saying he made a mistake in not knowing the exact weight of the goods when they were shipped; that the railroad agent at the starting-point had no business to "estimate" the weight. But this thing is done very often; but if any trouble arises it always falls on the shipper; and in this case it seems that, when the goods arrived at destination, the estimated weight was found to be too low, and the agent at that point figured up the difference and demanded $3.85. Later on, the railroad company discovered that the *rate* made in the first place was wrong, and this necessitated additional payment.

We do not wonder that our correspondent thought he was being imposed on; but the facts are, the railroad company had the advantage. If the poor shipper does not pay the full amount required by the rate and the weight of the goods, the Interstate Commerce Commission when appealed to can compel him to do so or take the consequences, and the consequences are something serious. We do not know whether the railroads of the country have secured a set of laws in their favor or not; but clearly they have the advantage in such cases over the shipper. On the other hand, there is no rule but what will work *both* ways. If the shipper can prove that the weights made by the railroad company were too high, or that the rate charged was in excess of the proper amount, and appeals to the Interstate Commerce Commission, that body will require the carrier to refund the difference.

Moral 2.—Carefully weigh your goods before you ship them; then when the railroad agent weighs them again, make sure that his weight corresponds with yours. If there is a discrepancy, ascertain where the mistake is before the goods are shipped. Second, ascertain what the rate is on the class of goods shipped. Make the agent show you the schedule. Keep all of your records; and then if there is any trouble, and the shipment is a large one, present the facts to an attorney.

DOUBLE-WALLED PACKED HIVES V. SINGLE-WALLED WITH A PAPER COVER.

THE readers will doubtless be interested in the symposium on this general question in this issue, on pages 73, 74, 75, 76, and 77. It is our opinion that this question of packing, absorbents, and size of entrances, is more dependent on locality than we had, perhaps, supposed. Mr. A. C. Miller, an excellent authority, seems to prefer the single-walled hive with black paper for a winter wrapping, or, rather, perhaps we should say, he concludes that there is no advantage in having the walls made thicker. He prefers large entrances on the *sides* of the hive and sealed covers. While he says nothing about sealed covers, he makes no provision for the moisture to escape upward, but, rather, to pass out through an entrance of ample dimensions. We do not question the accuracy of his judgment for his locality; but from exhaustive tests we made some years ago we are thoroughly convinced that bees in single-walled hives in this locality, even with paper covers, either died outright or were so weak in the spring as to be good for nothing for honey-production the following season. We did not at the time take any readings of the inside and outside of such hives; but we see no reason to question Mr. Miller's statement, that the difference in temperature between the outside and inside would be very slight with so large an entrance, and with walls so thin.

It is probably true that a contracted entrance, whether in a single-walled or double-walled hive, would not be advisable in his locality—that is, providing no upward ventilation were allowed. But conditions in other localities are so different that we feel very certain that the plan he recommends would not work in most of the colder climates; and Mr. Holtermann and Mr. Byer seem to be equally certain that they must have more packing for their localities. Mr. J. E. Crane, who is visiting us to-day, Jan. 20, expresses himself as decidedly favoring the views taken by Mr. Byer and Mr. Holtermann, and Mr. Crane is one of our most successful bee-keepers in Vermont.

Perhaps an illustration would help to make it plainer why we favor a double-walled packed hive rather than a single-walled hive. During the past season we built a small garage for storing an automobile. The structure was made of ⅞ lumber planed on both sides, and painted on the outside. This made a single-walled building, for we did not think it necessary to go to the expense of making double walls, because the building could be easily heated by exhaust steam from the factory. Now, it happened that a radiator in one of the living-rooms in our house was altogether too large for the size of the room. The temperature would go up to

80 and even 90, even when the weather was very cold outside. This room had two outside exposures and two good-sized windows; but the house was sheeted with inch pine lumber on the outside, and over this was nailed tar-felt paper. Over the whole was nailed ordinary siding. The inside walls were lathed and plastered in the usual way. It was very easy to warm this room in the house with that radiator.

Now, it happened that the inside cubic contents of the garage were about the same as those of the room. We concluded that, if that radiator was too much of a good thing for a double-walled room, it would be just about right for a single-walled room of four sides and a roof of exposure. What was our amazement when we found that, even in moderate weather, this big radiator would not make the garage warm enough so that the motor would start readily. When the temperature was down to zero outside, the temperature inside of the building was far below freezing. When that radiator was in the house, in a double-walled room, it would run the temperature up to 80 while the mercury outside was at zero with a high wind. We were at a loss to understand why this garage should be so cold with a radiator going all the time, night and day. On placing the hand on the siding we saw the reason at once. The boards were as cold as a block of ice. Indeed, it became very apparent to us that the outside cold penetrated those ⅞ boards to a much greater degree than we ever supposed. So little did they keep out the cold that a pail of water would freeze solid within two feet of the radiator.

Now, then, to the application. A colony of bees, even though it be contracted down to a comparatively small ball, is a miniature radiator, i. e., a source of heat. The closer a thermometer is placed to this ball of bees, the higher the temperature will go, providing the entrance is not too large. Now, if this little ball of bees is a radiator, and if those bees have to keep up their body heat by consuming honey, the colder the atmosphere *around* the cluster, the more food will be required. Overfeeding is quite sure to cause dysentery before spring. If the hive is single-walled, an immense amount of cold will penetrate those walls, making the problem of the bees to keep the cluster warm much greater. The thicker the walls, the larger the cluster, and the more it can expand over the food. It would seem that, for most localities, a moderate entrance with a double-walled packed hive will give better results in wintering than a single-walled hive or one protected by any kind of single thickness of paper. The question of the size of entrances and of upward ventilation or sealed covers will depend largely on locality. We are beginning to favor a flat board laid on top of the hive, not sealed down. This permits a moderate entrance and a slight amount of upward ventilation, but not enough to make the packing above damp.

The thermometer readings inside and outside of the hive by Mr. Byer and ourselves on pages 77 and 78 would seem to favor double-walled packed hives. The actual difference is anywhere from 20 to 40 degrees where the outside temperature has not taken a sudden change. A zero atmosphere or a few degrees above must be bad for a cluster, especially if it continues for days.

THE CENSUS OF 1910; THE MARKED DECREASE IN THE NUMBER OF BEES ON FARMS, AND WHY.

BEE-KEEPERS have been waiting with interest for the returns on the bee-keeping industry from the Census of 1910. Part of the data is now available and is presented herewith, together with similar data from the Census of 1900. That there has been a decrease in the number of farmer bee-keepers, there can be no question. Whether the tables showing this decrease by States are accurate we can not say; but decrease there surely has been. This is probably due to two causes; viz., 1. To a reduction in the amount of clover grown, either because intensive agriculture has crowded it out, or because soil that once grew clover luxuriantly has become "clover-sick"—that is, too acid. Clover is the main dependence for honey in most of the States east of the Mississippi and north of the Ohio. It is a notable fact that clover doesn't yield as it did in the olden days before the lime had been exhausted from the soil. When "bees don't pay" on the farm, they die off because the farmers won't feed them. We shall have more to say about this at a later time. 2. The other cause for reduction in the number of farmer bee-keepers is clearly traceable to bee disease that has made such rapid spread. The obvious remedy is to work for more extensive bee-inspection work and, besides, preach the doctrine of putting lime in the soil. That can be done cheaply, and make clover grow as before. While lime can have no effect on bee diseases it will make clover grow as it did in old days.

Attention should be called to the fact that these data are for bees on farms only, and that bees in towns and cities are not included. The official designation of a "farm" actually includes many apiaries in towns; but, as is well recognized, most of the large town apiaries have not been included in the enumeration. At one State bee-keepers' convention last winter it was found that approximately three-fourths of the bees there represented had not been included in the count. It is obviously not at all fair to the bee-keeping industry to count only the bees on farms when many of our largest bee-keepers are not on farms, but are in small towns or even in our larger cities. It is understood that no enumeration was made in the Census of 1910 of bees in towns and cities, and it is hoped that, before another census is taken, the authorities in the Census Bureau will learn that bee-keeping is not confined solely to farms.

The data presented shows a decrease of

116,408 in the number of farms reporting bees, and of 795,719 in the number of colonies reported. The valuations put on colonies of bees by many bee-keepers are of little significance; but it is interesting to note that these valuations show an increase of $193,139. The only States showing any increase in bee-keepers, worthy of serious consideration, are Minnesota, Oklahoma, South Dakota, Washington, Montana, Wyoming, and North Dakota—all western States. The greatest reported loss is in Utah, where a decrease of 49.5 per cent is shown in the number of farms reporting bees. It is worthy of consideration that the loss in number of farms reporting bees is usually greater than in the number of colonies, indicating that those now in the business are keeping more bees.

Bee-keepers should not take any of these figures too seriously, for they certainly are not an accurate representation of the industry. Apiculture was never in so good condition as it is now. As an indication of this, it may be stated that the demand for supplies during the last decade exceeds that of any previous period, and the markets for honey are continually improving. Honey production is fast becoming the business of the specialist, and, as a result, honey is being marketed in better shape and in larger quantities.

While it is true that these figures are not to be taken as seriously as the Census Bureau might wish them to be, yet it is a good thing for us to realize that there has been a falling-off in one part of the industry. If, as suggested, the brood diseases are a factor in this decrease, it emphasizes the necessity for spreading information on this subject so that those bee-keepers who have it in them to be good bee-keepers may be informed on this subject. Nothing will save a careless bee-keeper when disease reaches him.

In spite of these figures, there is no reason to doubt that there will be more colonies of bees in the United States in 1912 than ever before, and that the industry is on the increase.

STATE.	Farms reporting bees in		Per cent of gain or loss.	Colonies reported in		Per cent of gain or loss.	Value in dollars.		Per cent of gain or loss.
	1910	1900		1910	1900		1910	1900	
Alabama	23,911	32,100	—25.5	135,140	205,369	—34.2	213,000	288,000	—26.0
Arizona	441	489	— 9.8	23,770	18,991	+ 25.2	104,000	66,600	+ 56.7
Arkansas	19,692	22,182	—11.2	92,731	111,138	+ 16.6	200,000	204,000	+ 2.1
California	6,869	6,915	— 0.7	200,718	129,444	+ 55.1	728,000	364,000	+100.1
Colorado	3,563	4,518	—21.1	71,434	59,756	+ 19.5	309,000	195,000	+ 58.5
Connecticut	1,798	2,252	—20.2	9,445	11,438	—17.4	41,800	40,500	+ 3.2
Delaware	1,119	1,684	—33.6	6,410	10,187	—37.1	13,609	20,244	—32.8
Dist. of Col'a	13	7	+ 85.7	151	59	+155.9	790	199	+297.0
Florida	4,345	4,521	— 3.9	38,895	39,753	— 2.2	98,500	83,800	+ 17.5
Georgia	23,167	32,246	—28.2	130,549	187,919	—30.5	187,000	243,000	—22.9
Idaho	2,368	2,387	— 0.8	21,903	19,240	+ 13.8	100,000	65,000	+ 54.1
Illinois	29,741	34,932	—14.9	155,846	179,953	—13.4	487,700	486,200	+ 0.3
Indiana	19,487	28,632	—31.9	80,938	117,148	—30.9	230,500	278,900	—17.4
Iowa	28,935	28,977	— 0.1	160,025	138,811	+ 15.3	517,300	443,900	+ 16.5
Kansas	16,869	18,295	— 7.8	73,737	88,594	—16.8	218,600	278,000	—21.4
Kentucky	36,854	44,974	—18.1	152,992	203,820	—24.9	419,000	527,000	—20.4
Louisiana	4,928	6,148	—19.8	29,591	35,231	—16.0	58,200	54,300	+ 7.1
Maine	1,371	2,496	—45.1	7,592	10,857	—30.1	40,400	51,500	—21.6
Maryland	4,186	5,098	—17.9	23,156	28,013	—17.3	61,600	61,000	+ 1.0
Massachus'tts	1,597	1,799	—11.2	7,464	8,381	—10.9	39,700	35,800	+ 11.0
Michigan	16,892	18,122	— 6.8	115,274	100.397	+ 14.8	446,500	352,500	+ 26.7
Minnesota	9,522	6,078	+ 56.7	56,677	45,877	+ 23.5	221,800	167,300	+ 32.6
Mississippi	16,028	17,990	—10.9	74,350	95,257	—21.9	144,000	159,000	— 9.1
Missouri	40,110	41,145	— 2.5	203,569	205,110	— 0.8	585,000	508,000	+ 15.0
Montana	795	234	+239.7	6,313	1,801	+250.5	32,100	8,100	+294.5
Nebraska	12,538	12,130	+ 3.4	45,625	52,143	—12.5	153,000	200,000	—23.5
Nevada	176	278	—36.7	8,401	5,692	+ 47.6	48,500	20,100	+140.7
New Hamps'e	1,002	1,288	—22.2	4,644	5,520	—15.9	23,600	24,700	— 4.3
New Mexico	418	410	+ 2.0	10,052	6,164	+ 63.1	46,300	20,800	+122.6
New Jersey	1,627	2,327	—30.1	10,484	14,118	—25.7	41,600	39,200	+ 6.0
New York	15,279	22,738	—32.9	156,360	187,208	—16.5	647,000	594,000	+ 8.9
North Caro'a	36,258	41,051	—11.7	188,998	244,539	—22.7	387,000	430,000	—10.1
North Dakota	79	30	+163.3	495	279	+ 77.4	3,086	1,474	+109.4
Ohio	23,203	34,458	—32.7	98,241	151,391	—35.1	276,000	403,000	—31.5
Oklahoma	4,816	3,438	+ 40.1	19,411	20,137	— 3.7	64,300	45,400	+ 41.5
Oregon	8,861	8,895	— 0.4	47,285	55,585	—14.9	150,000	160,000	— 6.4
Pennsylvania	22,297	28,962	—23.0	124,830	161,670	—22.8	478,000	532,000	—10.0
Rhode Island	285	370	—23.0	1,267	1,681	—24.6	6,100	6,800	— 9.7
South Caro'a	12,528	16,272	—23.0	75,422	93,958	—19.7	135,000	143,000	— 5.6
South Dakota	1,347	387	+248.1	6,553	2,063	+217.6	31,600	10,100	+213.1
Tennessee	30,712	38,225	—19.7	144,479	225,788	—36.0	341,000	487,000	—30.0
Texas	37,875	60,043	—36.9	238,107	392,644	—39.4	675,000	749,000	— 9.9
Utah	1,873	3,037	—49.5	26,185	33,818	—22.6	123,600	111,500	+ 10.9
Vermont	1,124	1,878	—40.2	10,215	12,836	—20.4	44,300	47,000	— 5.5
Virginia	22,437	25,774	—12.8	104,005	139,064	—25.2	303,000	308,000	— 1.9
Washington	5,886	4,435	+ 32.7	33,884	30,870	+ 9.8	127,000	107,000	+ 18.8
West Virginia	24,035	25,240	— 4.8	110,673	111,417	— 0.7	388,900	375,600	+ 3.5
Wisconsin	10,391	10,535	— 1.4	95,638	106,090	— 9.9	360,500	377,000	— 4.4
Wyoming	579	153	+278.4	4,596	1,020	+350.6	20,493	5,322	+285.1
Grand total	590,907	707,315		3,462,520	4,258,239		$10,372,978	$10,179,839	

A dash (—) before a number indicates a loss; a plus-mark (+) shows a gain.

Stray Straws

Dr. C. C. Miller, Marengo, Ill.

A fight between queens is mentioned as an attraction at a bee convention in *L'Apiculteur*, p. 466.

Dr. Weygandt says the Caucasian is the original race of bees from which all others are derived.—*Bienen-Vater*, 334.

The warden of the Illinois penitentiary at Joliet, Ill., says that 90 per cent of the men are there on account of liquor, and that out of 158 life men all but four or five committed the crimes for which they are in prison for life while under the influence of liquor.

Please allow, Mr. Editor, an addendum to the good advice given p. 26. When the colony attacked by robbers is carried into the cellar, set in its place an empty hive of similar appearance. If you don't, the robbers will pitch into the next hive. Besides, if you leave the place vacant, when you put the hive back again the robbers will notice the change, and will say, "There's our prey back again." [Good correction! Thanks.—Ed.]

Der Deutsche Imkerbund (German Bee-keepers' Confederation) now numbers 82,547 members.—*Bienenzucht*, p. 183. We have a few things yet to learn from the Germans. [It would be interesting to know what is the basis of their organization. Is it fostered by the state? or do the members pay annual dues and receive something in return which justifies them in renewing year after year?—Ed.]

You ask what's the difference between a comb in a brood-frame and a comb in a section. None if the comb is the same. But in a section it is not expected brood has been reared, and it is expected in the brood-frame; and my experience is that moths greatly prefer the old black comb. You ask why the moth should not lay eggs in sections if she lays in combs that have been fumigated or frozen. I don't know. May be the cocoons make a difference.

Six colonies of bees, well packed, were successfully shipped in winter, in Hungary, 335 miles by rail and 2½ by wagon, during the last of their journey enduring a temperature of 20 degrees below zero, Fahrenheit. —*Leipz. Bztg.*, 154. [We believe it to be entirely possible. Trouble, if any, probably would not manifest itself immediately but later on. If the bees were set down on stands outdoors we should expect the disturbance would cause a heavy mortality later on. If, on the other hand, they went into a cellar where the conditions were ideal, no bad results would probably follow.—Ed.]

Dr. Hering, *Bienenzucht*, XI., quotes Gleanings as recommending the feeding of thin syrup in the open to prevent robbing at late extracting, and says, "We doubt whether this will have any result. The strong aroma of the extracted honey and the odor of the open colonies will, of course, attract the robbers more strongly than the thin syrup." But, doctor, you have to believe what you see, don't you? [Gleanings never advocated feeding sweetened water during extracting seasons to prevent robbing. We have always recommended, or supposed we did, *honey* thinned down with water. While probably not very much sugar-sweetened water would get into the extracting-combs again, we think it advisable to avoid any appearance of evil by feeding honey thinned down to the consistency of nectar.—Ed.]

J. L. Byer says, p. 5, that for his latitude outdoor wintering is best. I'm in lower latitude, and cellaring seems best here. But that doesn't say Bro. Byer is wrong. I suspect that he doesn't have the hard winds, *long continued*, that we have here. [Is it not possible, doctor, that, if you were to try outdoor wintering again, you might discover that it is more to your advantage to use it than the indoor plan? Mr. R. F. Holtermann says he would not go back to the old way under any circumstances. When we suggested to him that bees wintered outdoors consume more stores he said, "Yes, but they are correspondingly stronger in the spring. As a rule, indoor-wintered colonies do not raise very much brood; while those outdoors will often begin brood-rearing on a small scale in February and March —two months before they would do very much at it in the cellar.—Ed.]

Sweet Clover as a Renovator of Poor Soil.

Mr. Frank Coverdale, in his articles on seeding sweet clover, lays emphasis on the need of having the soil fertile. Now, the farmer who has these conditions is all but ready to sow alfalfa, and is much more likely to go on and seed to that plant rather than to something about which he has heard such conflicting reports as with sweet clover.

The great opening for sweet clover, provided it can be made to do the work, is as a renovator of impoverished soils. That in the wild state it grows and flourishes upon the poorest soils is a matter of every-day notice. That there should be any extensive failure to grow it on poor soils would seem to be due to but one cause. That sweet clover and alfalfa have the same nitrifying bacteria is frequently mentioned, and the need of soil inoculation for the latter often urged. That legumes are chiefly benefited by such bacteria on poor soils is also known.

The means by which its seed is transported in the wild state, on wagon-wheels, by streams, and from railroad gravel-pits, are well calculated to secure this inoculation, and doubtless explain its cosmopolitan nature under such conditions. On the contrary, seed harvested from standing plants has little chance of carrying the bacteria; and unless they are supplied they will be liable to failure on soils in which they are necessary to a good growth. Then why not inoculate for sweet clover? If by working in about 200 lbs. per acre of earth from a sweet-clover patch, the soil-enriching powers of this plant can be secured, it certainly ought to pay to take the trouble, and no harm done the bee business either.

McConnelsville, O., Dec. 11. H. D. Tennent.

NOTES FROM CANADA

J. L. Byer, Mt. Joy, Ont.

Thanks, friend Crane, for that word of good cheer, page 745, Dec. 15. May your prophecy concerning next year be correct. However, while I am not fretting about what we can not help, nevertheless my faith is not very strong for a good crop of honey in 1912. I hope I may be "disappointed."

Much evidence seems to be accumulating as to the efficacy of carbolic acid used in different ways in the handling of bees under various circumstances. The use of this drug for this purpose has been quite common in the British Isles for some time; but so far as I know it has been used but little in Canada. I am looking forward to trying it some time next summer, as I am convinced that it must be a good thing for certain manipulations of the hive.

A correspondent of the *British Bee Journal* asks for the best method of extracting wax from brood-combs, and expresses the idea that the screw presses advocated by many are too expensive to justify him getting one. The editor of that journal advises him to get a "solar," and says that is the best and cheapest way of extracting wax, adding that they will soon repay their cost. Can the editor really mean that a solar is the best arrangement for getting wax out of brood-combs? Why, here in Canada we have much hotter days than they do in England, and the solar that will not leave anywhere from 25 to 50 per cent of the wax in old brood-combs is yet to come under my notice. Last August I happened to be in a large apiary conducted by an old gentleman, and he asked me if we ever tried burning the stuff from the solar wax-press after the wax was *all out.* He said that his women folks liked it when they wanted a particularly hot fire; and when I saw them putting some of this stuff in the stove I didn't wonder it made a good fire. Oh how I ached to get hold of a few tons of that kind of *fuel!* It would not have gone into a stove. A solar is all right for cappings or bits of comb, etc.; but in my opinion it is worse than useless for brood-combs. More than that, since disease is getting so evenly distributed over the country, I now regard that kind of wax-extractor as being a very dangerous arrangement in the hands of many bee-keepers, and for my part I would gladly see solar wax-extractors become a thing of the past.

Bees wintered outdoors had a good flight in most localities in December. Up to date (Jan. 1) we have not had nearly as severe weather as at this season a year ago; in fact, the thermometer has not yet reached the zero-mark, although just now we are threatened with a cold wave. There was much rain and mud in December, and a farmer was telling me that, with the freezing and thawing, some of his red clover was heaving a bit—an unusual circumstance for this time of the year. However, with colder weather now, there will be no more danger along that line for a while. As for the alsike heaving, there is no need for worry, as there is very little here to heave. Although the weather has been mild, from all reports received so far the bees indoors appear to be wintering well. A few days ago a friend living near where our east apiary is wintering inside of three caves built right on top of limestone rock, wrote me that he had just been in the repositories, and that all were dry and nice, and the bees so quiet that one would not know they were there.

The principle on which these "caves" are constructed appears to me to be sound, and they might be all right in localities where it is not advisable to go deep into the ground. They have given perfect satisfaction for a number of years. Some time I will illustrate them for the benefit of the readers of Gleanings. This winter 280 colonies are in them, and in past seasons as many as 400 have been wintered with good results.

A. C. Miller is a close observer, but I can not agree with his conclusions as to how different methods of clipping the wings of queens will affect their chances for being superseded. For a number of years I have clipped the queens while they were on the combs, and I *try* to get more than half of all the wings off. I can not see a bit of difference so far as their usefulness is concerned, compared with those that have only the tips of one side cut off, or any other particular style of wing-dressing that may be in vogue. Two years ago I reported having a queen that lived to be seven years old—no doubt about the matter at all, as I had proof of my assertion. Well, the man this queen was purchased from had the habit of taking all of the wings off pretty close, and in this particular case he had outdone himself and clipped all her wings off close. She looked very strange, and was always easily seen, even though she was a dark Carniolan. As to her qualities, I need not say much about them, considering that she was alive till seven years of age. She was very strong every year till the fifth, but only moderately so the last two years. Combs full of brood sealed all over—as if all eggs had been laid in a day in that comb—did not look as if she were hampered much by having no wings. But then, who knows but that she might have been better and lived till more than seven years if she had been properly clipped instead of being marked as she was? However, I should like to have a hundred queens like her so far as her good points were concerned, and wouldn't object if they had their wings off either, as I do not think it would hurt them a bit.

Bee-keeping Among the Rockies

WESLEY FOSTER, Boulder, Colo.

Just take this pointer, all you contributors to GLEANINGS, including myself: Tell your little story as simply and naturally as does Miss Lucille Johnson, page 754, Dec. 15.

ABUNDANT SNOWS.

We are having an abundance of snow and cold weather in Colorado at the present time. The snowfall on the ranges has been heavier than for several years, and an abundant supply of irrigation water is practically assured.

AUTOS FOR BEE-KEEPERS.

The automobile is about the livest subject among the bee-keepers at the present time. It seemed that, before and after every session of our Colorado State convention, the members would be discussing autos and their use for out-apiary work. Autos that will last for several years for bee-keepers' use are now so moderate in price that it is a question whether a progressive bee-keeper can afford to be without one. They have come to stay, and those most loud in their praise are those who are using them. Several machines will probably be purchased as the result of the informal experiences given at the convention. The machines most generally in use in Colorado are light runabouts or auto wagons, the latter similar to the International auto wagon which will carry one thousand pounds. Motor cycles are quite popular with some bee-keepers for use in getting to their out-apiaries. [See editorial.—ED.]

Mr. F. Rauchfuss, manager of the Colorado Honey-producers' Association, recently told me a few things about the honey situation in the West, which would do every Western bee-keeper good to know. Extracted honey, over and above that which can be sold in the local markets, has to be sold in the East in competition with Southern and far Western honey. Comb-honey markets have been developed which demand Western honey, and pay a good figure. The Pacific coast has a more favorable freight rate on the shipment of extracted honey than has Colorado and the inter-mountain region. Comb honey, the past season, brought $2.75 to $3.25, while the very best extracted water-white alfalfa honey sells slowly at not over 7 cents in large quantities. Under present conditions there is no doubt whatever that comb-honey production pays far better than extracted honey. In making these statements I am speaking of Colorado and the inter-mountain regions only. The average bee-keeper finds that he can sell a few cans of honey around home for 10 or 15 cts. per pound, and straightway figures that he can make more money with extracted at this price than with comb honey at 11½ to 12½ cts., when he has to buy sections, foundation, shipping-cases, etc., and so he goes and changes from comb to extracted honey, soon finding that he can not market his increased product around home, and has to put his nice alfalfa stock on the market in competition with honeys of cracker-factory grade. Extracted-honey producers in Colorado, within the last few years, have had to accept 6 cts. for white alfalfa honey to be used by cracker-factories because they could not find a market for this table honey. At the present time there are five or six carloads of extracted honey in Colorado, and probably not one carload of comb could be found if the whole State were carefully gone over.

BEE-KEEPING EXTENSION.

There are several problems before Western bee-keepers that may not affect those in the East. Here there are many specialists who do not look with favor on bee-inspection. They hope that foul brood will soon clean out the little fellow and leave the field to himself. Is he right? He figures that he can keep foul brood from gaining a foothold in his own apiaries while it is destroying the bees of his less watchful neighbors, and he does not want the inspector to come around and show them how to get rid of the disease. What is the course to pursue for the best interests of the bee-keeping industry as a whole?

A few have spoken to me that were doubtful of the good of having bee-keeping represented on the farmers'-institute courses. They take the stand that it encourages many to take up bee-keeping only to become discouraged later on and lose money by the operation. Then it tends to overstock the field, they claim.

What is the best course to pursue? Stop all bee-inspection and bee keeping extension, and let the industry go as it has, or try to educate the beginners in the best methods? This subject arouses bitter argument in some places in Colorado and the West.

The whole tendency of the times is toward specialization, and the specialist feels that the ignorant amateur or careless box-hive bee-keeper is a thorn in the flesh. He does not believe such men can be taught; he thinks the only way is for him to become discouraged and sell out to the specialist. There are fewer bee-keepers in Colorado than ten years ago, but more good ones, and there are a goodly number of first-class small bee-keepers. I know some farmers who are really good bee-keepers, and who welcome suggestions and help through farmers' institutes and farm papers, bee-inspection, etc. Let's hear from others on this question.

Conversations with Doolittle

At Borodino, New York

ADVERTISING AS PRODUCERS.

I have been reading the *Rural New-Yorker* for the past year, and I notice that many of the producers of apples, potatoes, beans, etc., put inside the packages a slip of paper, or something of the kind, telling what they received as producers, and requesting the consumer to let them know what he paid for the same. From data received in this way the *Rural* figures that the producer gets only about 35 cents of the consumer's dollar. This seems quite unfair to the producer, and gives a clue to the reason why we bee-keepers receive so small a price for our honey when compared with most of the things we have to buy. Now, while I would not advocate the same plan, I have been wondering why it would not be a good plan to put our names, as producers, on every crate of comb honey we send out, if not on every section, using a pretty stamp therefor. Then by sending out only a gilt-edged article the consumer would soon know of whom he could buy the best honey, and in this way the progressive bee-keeper might build up a most profitable trade, while those who work only in a slipshod way could be shut out from hurting us by selling their product for less than good honey is worth, as is so often done by the careless and indifferent.

This question carries me back more than a quarter of a century, when I was producing much more comb honey than our home market would consume, which obliged me to send quite a share of my crop abroad. I sent some to different counties in this State, and in States adjoining, and reasoned that no buyer should object to the producer's name and address on the packages of honey which he produced, and even went so far as to procure a rubber stamp, and put my name on every section. This was very little trouble if done just before the cover to the crate was nailed on, as the sections were all in rows, so the stamp could be pressed on each almost as soon as it takes to tell it. As I "wielded" this stamp I said to myself, "If the producer or manufacturer of an article has not the right to have his name on it, I don't know who has. How is a honey-producer going to advertise his business and work up a trade for his product unless he places his name on every section of honey he considers as A No. 1? It has taken me over fifteen years to learn how to produce a real fancy article of comb honey, and I should be foolish to give this away to some one who happened to buy my honey expecting to sell it again. Those purchasing to sell again have a right to place their name on the *package* as the seller of it, but in no way should they be allowed to mark it or the sections so as to advertise themselves as the producer."

About this time I took a sample of my section honey to a buyer in Syracuse, N. Y., taking a section from each of the different grades which was produced that season, expecting to put my stamp on only that which I considered a fancy article, as I did not consider it good policy to stamp the inferior grades. The buyer looked the samples over, got my prices for each grade, then about the quantity I had, made a few figures, and offered me about $25.00 more than I expected to get for the whole crop. Of course I sold it to him. I then asked him how he wanted it put up. He said, "Put as near as you can the proper proportion of all grades in each crate." I objected, and then told him how I had been in the habit of putting my stamp on each section of fancy and No. 1 honey, putting that in crates by itself, while the off grades went without the stamp. He said that he had bought the honey, paid me a good figure for it, and it should be his right to dispose of it as he saw fit, to which I had to agree or be guilty of not living up to my part of the contract. We then talked the matter over, and he agreed that, where I did my own selling to the consumer, I was right in wishing my name on every package, as that would hold me and the consumers together. But with him as a buyer the case was different. He was building up a trade there in Syracuse and in other cities, reaching out into other States, therefore he wished to have his name on every package, and not that of the producer. He then went on and told how he was spending time and money and energy and thought in building up a market for honey in all these cities, and considered that it was only reasonable that he should reap a reward for so doing. He did not advertise that he was the producer of the honey he sold, but tried to impress upon his customers the idea that he was an expert judge of honey, and took great pains to secure that which was of excellent quality. He took great pains to live up to his professions, and always furnished an excellent article, and thus led his customers to believe that, when they bought one, five, ten, or twenty-five crates of honey of him, they could rest assured that it had *his* guarantee that it was all right. He said that, if he should send out honey having upon the sections the names of the different producers of whom he purchased, he would never succeed in building up a demand for the honey he bought, for one day he might be selling honey stamped Doolittle, and the next day that stamped Jones, and so on to the end of the list of producers from whom he bought. When we were through with this talk I saw that there were two sides to this as well as to many other questions, and that, if I produced more honey than I could sell at retail, or direct to the consumer, the buyer of this overplus was entitled to pay for the time he spent in getting it from the producer to the consumer.

He instructed me to put this honey up in crates holding from 100 to 112 pounds, according as the sections were completed by the bees. When delivering the second load, a day or two after the first delivery, I found him sorting the honey I first brought, and putting the different grades into different-sized crates or cases, and sending each to his different customers in the different cities, in accordance with what any particular market called for.

General Correspondence

HIVE PROTECTION.

The Temperature of the Hive Outside the Cluster Nearly the Same as that Outdoors; Thin Hives Covered with Black Paper Better than Expensive Chaff Hives.

BY ARTHUR C. MILLER.

Some years ago I brought to the attention of bee-keepers the value of black water-proofed paper as a winter and spring covering for hives, and explained some of the reasons for its usefulness, and some of the things to be guarded against. Several, evidently thinking that I erred in some of my methods, or overlooking some of the directions, proceeded to use it contrary to some specific and emphatic instructions. They came to grief, and promptly laid it to the black paper. Others thought any water-proof paper would do, and failed to secure expected results in its use. Still others, thinking to improve on all the rest, covered their hives with several layers of papers, and then put a telescope cover snugly over it. All failed to grasp the fundamentals.

Many bee-keepers now have hives either paper-protected or are planning so to protect them in the spring on removing the bees from the cellar, and it may be helpful to repeat at this time some of the essentials, and emphasize some of the important details.

First, a description of conditions within the hive in winter and spring is necessary. In a normal colony of average size, and which has not been unseasonably meddled with, the cluster will be found in early winter down close to the entrance. If such a cluster is opened and examined, it will be found to be nearly spherical in shape, and usually the cells within the sphere contain each a live bee; and between these bee-filled combs other live bees are solidly packed; so, except for the thin waxen cell walls, there is actually a solid living ball of bees. About the outer part of this cluster unsealed honey is found, and beyond that the sealed.

If into that ball, and in the spaces between the combs beside, behind, above, and below the bees thermometers are thrust, some surprising things will be revealed. For this purpose long slender thermometers with long straight bulbs are used. These are passed through holes bored in a super cover, and the cracks about the glass stems are stuffed with cotton. The scales of the thermometers are on white glass backgrounds made a part of them. These scales are selected so that the range of degrees probable will be above the level of the super cover. Over these protruding glass tubes is placed an inverted box or similar cover. This may have glass windows to read the scales through, or the box may be lifted off for the purpose.

As soon as the bees quiet down from the disturbance caused by thrusting the thermometer bulb into their midst, a temperature of 68 to 72° F. will be found. Outside of the cluster, before, behind, or beside, the temperature will be about the same as out of doors. If external temperature has been nearly level for a day or two, the internal temperature will be not over one or two degrees higher. Just above the cluster the temperature will be but a few degrees below that of the cluster center.

These facts are the same whether the hive has walls stuffed with three inches of sawdust or chaff, or are only half an inch thick.

Now, if the thermometer within the cluster is wiggled, the mercury begins to rise; and within five to eight minutes it has risen ten to twelve degrees. Remember this, for it shows the cost of disturbance of the bees in winter. That increased heat is expended energy—bee life plus honey.

If the bees are in thin-walled hives the temperature within the hive (and outside the cluster) will closely follow that outside the hive. In chaff hives, particularly with small entrances, the fluctuation is slower, and this is to the disadvantage of the bee-keeper. If a blizzard has been raging, or strong winds with low temperature have prevailed for several days, and then there follows a still sunny day with a considerably milder temperature, the inside of that "nice warm chaff hive" is not pleasant to contemplate. It is just as cold in there as it was out of doors when the storm was raging, and it stays so for a long time. On the other hand, after an extended period of milder weather the temperature inside reaches the same level; and if a cold spell follows, the inner temperature falls slowly. But winter "mildness" is a long way below cluster temperature.

Bees in the thin hive get *more rapid change* of temperature, but *no greater extremes*. If the entrance to their hive is sufficiently large, little or no moisture will collect on walls or combs. If the entrance is small, moisture may collect; but the first mild and sunny spell will dissipate much of it. But not so in the thick hive. If moisture collects in it, it stays.

Just as soon as brood-rearing begins, internal conditions undergo a change. Cluster temperature rises; and when the brood occupies part of two or three combs, much more moisture is given off.

The exact temperature change within the cluster after brood-rearing is well under way is as yet a matter on which the several investigators are not agreed. Some note a regular rising and falling of about ten degrees each day, the rise beginning about 10 A.M., reaching its maximum in about an hour or a little more, remaining level until nearly 1 P.M., and then dropping until it reaches minimum at about 2 P.M. This is designated as a feeding fluctuation. Other observers noted the rise of only about 18° F. from the minimum of no brood, so that, in

the presence of brood, the temperature of the cluster stands steadily at about 88° F. And thus matters remain until the cluster "breaks."

When the bees cease to pack into the cells and spread out over the combs (break cluster), conditions within the hive are materially changed. Every thermometer will give nearly the same reading (if the colony is normal); those next to the brood, reading a little above the others. In other words, the bees are keeping the whole chamber warm, and the chaff-packed walls become a very decided help to the bees.

The bees in the unprotected thin-walled hives can not keep the whole brood-chamber warm, so that, from the "breaking of the cluster" until settled warm weather, they are kept much behind colonies in protected hives. But if a single-walled hive is properly covered with a *black* water-proof paper, the results are even better than in the more expensive and more cumbersome chaff hive. Paper to be "properly put on" should be so adjusted that no drafts can enter or leave the hive except at the entrance, which should be left open to a size not less than one by fourteen inches.

Before brood-rearing commences, the temperature within a hive thus protected fluctuates more widely than out of doors, and with this difference: When the sun shines, the black paper absorbs much heat; the hive is warmed through, and the condensed moisture is dispelled. As the season advances and the sun gets higher, the increase of temperature within becomes greater, even up to a point where the bees are incited to considerable activity. If now the entrances are small, the whole chamber becomes so warm that the bees will come down and start out as in summer, only to plunge into a chilling atmosphere without, and perish. But if the entrance is as large as indicated, when the bees reach the bottom of the frames they encounter a stratum of cold air, and, hesitating, start out slowly, if at all.

When the sun passes, the radiation from the paper-protected hive is slow—very much slower than the absorption of heat from the sun. When the cluster finally breaks, the bees can keep this hive as warm as the chaff-protected one. And they have the additional help of the sun's heat which is absorbed by the black paper.

There is a vast difference between a hive painted black and one covered with paper that is black. But where a thin telescope cover is used, and that is covered with black paper, all the advantages of the paper-covered hive are secured with the additional advantage of convenience and permanency. Only two additional items have to be considered with it — namely, having it deep enough to cover the whole hive-body, and having some sort of weather-strip around the bottom edge so air can not blow up under it.

In the spring, after the cluster breaks, it is safe to contract the entrance to suit the owner's fancy; but experience has shown that no real gain was made by such procedure, if the colonies were of normal size.

Providence, R. I.

[When we received the above article we felt that the importance of the question at stake was such that the other side should be presented at the same time; accordingly we sent a copy of it to Mr. Holtermann and Mr. Byer. Their replies follow.—Ed.]

HIVE PROTECTION.

Though the Temperature Outside the Cluster of the Interior of a Thin Hive with a Large Entrance May Vary Little from that Outdoors, does this Prove that Ample Packing is Useless?

BY R. F. HOLTERMANN.

STORES.

Mr. Miller says, "If such [a natural colony of average size] is opened and examined, it will be found to be nearly spherical in shape, and usually the cells within the sphere contain each a live bee, and between these bee-filled combs other live bees are solidly packed; so, except for the thin waxen cell walls, there is actually a solid living ball of bees. About the outer part of this cluster unsealed honey is found, and beyond that the sealed." It is a mighty difficult matter to say what "a normal colony of average size" is; but the description which follows would, in my estimation, picture a colony not well equipped for winter. (It may be insisted that, as I use a large hive (twelve-frame Langstroth), and do not allow my bees to swarm, a description of my bees would not give an average colony. Let me say that there are many bee-keepers who have adopted this system, or are aiming at it with a large measure of success, and many more are convinced of the economy and desirability of such a system, but do not yet know how to make a success of it.) I will guarantee now in early January (for I have had such for years) to take a committee to some of my apiaries in the early spring and show them many colonies that have bees on all of the twelve combs—colonies which ran in weight, without cover, 100 lbs. or even more in the fall of the year. Such colonies we all know must cover a very considerable portion of the capped honey in the fall and early winter. Colonies and their stores should be so arranged that they cover as nearly as possible all of the winter stores in the hive, as stores not covered by the bees during cold and damp weather deteriorate, and so much the more if there is much entrance or other opening to allow of the free circulation of air. It does not take a very good judge of honey to distinguish between honey which has been covered by the bees and that outside of the cluster in the hive during the winter months. The uncovered stores simply absorb moisture and atmospheric impurities, and granulate or deteriorate.

If I have to feed, and have only a limited number of colonies to prepare, I would not feed until close to the time when we *may* have permanent cold weather. I would give a syrup made of 2¼ lbs. of granulated sugar to 1 lb. of water brought to a boil; and if I wanted to do what I felt sure would be the best, I would add a teaspoonful of tartaric acid to each gallon of syrup. There is then little need of evaporation by the bees, and they would store the syrup in the midst of the cluster. No better stores can be provided for bees during winter confinement. In my estimation, if a bee-keeper has only an early surplus-honey flow such as clover, his bees are really never in a proper condition for best wintering without feeding; because if they have enough stores in the hive (which, as a rule, is not the case), it is not in the place where the bees can keep it in the best condition.

TEMPERATURE AND ENTRANCE.

Mr. Miller says, further: "Outside of the cluster—before, behind, or beside, the temperature will be about the same as out of doors. If external temperature has been nearly level for a day or two, the internal temperature will be not over one or two degrees higher. Just *above* the cluster the temperature will be but a few degrees *below* that of the cluster center" (italics are mine). This, he states, is 68° to 72°. This, no doubt, will be correct if the bee-keeper follows out his direction as to size of entrance, "which should be left open to a size not less than one by fourteen inches." The object in leaving the large entrance as stated by Mr. Miller is, "If the entrance is small, moisture may collect." Just so; and that is one reason why I do not want the water-proof paper over the hive, for it means that the moisture and foul air must all come out at the entrance, or in part condense on the stores. The fresh air and foul air by this method come out at a common low-down entrance. In other words, the oxygen to assist the fire to burn, and the smoke and exhaust air, all go in and come out at the damper of the stove. Such a system is not based on scientific principles.

The entrance of the hive can be very small in winter. The entrance to my hive is 1¼ inches deep by the full width of the hive, 19 inches. I used to keep, during hot weather, a pair of wedges, ⅞ in. deep, at the front of the hive, running to nothing an inch from the back, these placed between the sides of the bottom-board and the side of the hive. They were removed when the robbing season set in. I now have them as a permanent fixture the year round, and contract the entrance to suit my needs by a reversible entrance-board to fit lightly between the sides of the portico, 2½ in. deep, and ¼ in. wide. Dividing this board by an imaginary line parallel to the bottom-board into two equal parts we have two parts, each 1¼ in. wide. The one has on the outer edge an entrance 6 in. long by ¼ in. high. The other, outside, an entrance 4 in. long by ¼ in. wide, and three holes next to the imaginary line —one in the center lengthwise, and the other two one at each side about 2½ in. from the center hole. These holes are ⅜ in. in diameter. During the fall I turn next to the bottom-board the 6-inch entrance. When I pack for winter I turn the 4-inch entrance down. The three ⅜-inch holes now come just below the front board of the hive. Before, with the 6-inch entrance, they were closed by the front board of the hive, as they are not in the center of the board. Dead bees can not close these round holes until they accumulate to the depth of one inch on the bottom-board, which does not happen as long as the colony is worth saving.

By putting a piece of lath in the bridge in front of the entrance I can, by reaching with a wire through the three ⅜-inch holes in the outer case, close the lower 4-inch entrance quite or almost entirely.

The fresh air in moderate quantities enters the well-protected entrance (the holes in the outer cases are not on a level with the ⅜-inch holes in the entrance board or block to check drafts). It ascends about the bees; and as it is being warmed it keeps rising, taking with it moisture and impurities, finally passing out of the hive above. The exit is expedited by a queen-excluder resting on each hive, with a cloth on the queen-excluder. In this matter I have followed the advice of Jas. Armstrong, one of Ontario's efficient inspectors. The air with the contained moisture and impurities passes through the leaves, 8 to 10 inches deep above, and condenses on the cold ½-inch cover, with roofing-paper outside above, or passes out of the case through ventilators for the purpose.

With such a method no one need tell me that the temperature inside the hive, about the cluster, is, in a more or less short time, the same as that outside. I am quite free to admit that much (almost all) the advantage of packing is lost when a heavy cold wind strikes the entrance of the case. But I have an 8-ft. fence about a small piece of ground, and I feel very strongly that any other method of caring for bees outside is a mistake—sometimes a calamity.

LOSS OF HEAT, THEREFORE VITALITY OF THE BEES, PLUS HONEY.

Mr. Miller himself furnishes an excellent foundation for opposing his conclusions in the statement, "If a blizzard has been raging, or strong winds with a low temperature have prevailed for several days, and then there follows a still sunny day with a considerably milder temperature, the inside of that nice warm chaff hive is not pleasant to contemplate;" and he tells us, "Just *above* the cluster the temperature will be but *a few degrees below* that of the cluster center." *There is the point.* This is clear proof that there is a certain amount of heat given off by the cluster of bees. From Mr. Miller's experiments I find it is even more than I expected it to be. This heat given off by the cluster has an effect upon the hive, and a much greater effect if the entrance to the

hive is small and the bees are *well* protected by packing, but is rapidly lost with an entrance in the winter and spring, 1 in. by 14 inches. The heat passing away more rapidly compels more heat to be generated, which, as Mr. Miller rightly states, "Remember this—that increased heat is expended energy—bee life plus honey." If we have a stove (the cluster) in a room (the hive) it makes a vast difference if we open the window half an inch or take the window out altogether (my winter entrance in contrast to Mr. Miller's).

It seems to me that, however sound the argument may seem to some, an overcoat to keep out the cold is a good thing to keep out the heat, or that no overcoat is a good thing in the morning because the sun can strike us better later in the day to warm us up. As with us, so with the bees—the natural heat of man and bees has to be considered.

SPRING.

In spring, hives protected as mine are, the bees are active in the hive feeding brood, and the queen laying, when in unpacked hives about all they appear to have the energy to do is to turn up their tails slowly, let their stings protrude, and give the well-known accompanying buzz. Perhaps in Mr. Miller's locality the temperature does not range very low nor last for any length of time. The protected entrance also almost entirely prevents robbing, and also keeps the bees from coming out on the least provocation.

Brantford, Ont., Canada.

THE RESULTS OF SOME EXTENDED EXPERIENCE IN CANADA.

Colonies in Thin Hives Wrapped with Paper Died, while Others, Wintered in the Same Yard in Packed Hives, came Through in Good Condition.

BY J. L. BYER.

I have had some considerable experience in the matter of wintering bees outdoors in our severe Ontario climate; and whatever I shall say will, of course, be based on that phase of the subject. And right here let me say that I know nothing of what the climatic conditions of Rhode Island may be, and, for aught I know, Mr. Miller's papered bee-hive may be all right for that State, and countries in a similar latitude. At the same time, I can not understand how it is that what is good for us in a colder climate would not to a lesser degree be good for a milder one, where, even if the thermometer does not go as low as it does here in Ontario, there are nevertheless very sudden changes from cold to warm, and *vice versa*.

As Mr. Miller says, some few years ago he boomed the papered-hive idea in the *American Bee-keeper*. Well, I myself was one who tried to save a few dollars at a time when a silver quarter looked as big as a "cart-wheel," and as a result I got "stung" in good shape. In glancing at the subheads of Mr. Miller's article I notice the phrase, "Thin hives covered with black paper better than expensive chaff hives," and the thought came to me that, if such is the case, a number of bee-keepers who have no money to throw away are making fools of themselves in going to the trouble of giving lots of protection to their bees when a common hive wrapped with a few farthings' worth of paper would answer the bill *better* than all the protection (?) we are giving them. Among the number, the names of McEvoy, Holtermann, Sibbald, and Miller come to my mind, and these four men winter colonies by the hundreds outdoors. Counting in my bees, the five of us winter probably 2000 colonies, so the expenditure in the way of protection, as we now understand the term, amounts to no small sum in the aggregate. Many others might be named, but these names happen to come to my mind as being associated with outdoor wintering quite prominently.

Now, as I have already intimated, I propose to speak on this matter from the standpoint of experience; and in order to get directly at the subject I will at once tell how the plan as advocated by Mr. Miller worked here in Ontario during a winter such as our grandparents designated an "old-fashioned" one. Having a number of colonies in single-walled hives that had to be looked after in some way in order to carry the bees over the winter, friend Miller's plan that appeared in print just at that time was eagerly taken advantage of as a method that would help me out and at the same time solve the question of winter protection when I had no money to buy winter cases. The hives were prepared (about 20) as nearly as possible according to Mr. Miller's direction, with the exception that not quite as large an entrance was given as he specifies in his present article. As a matter of fact, he says an entrance should be not less than one by fourteen inches, and of course this would be impossible in an eight-frame hive. However, I want to be perfectly fair in the matter, and I will admit that the entrances I gave were not as large as they *could* have been in an eight-frame hive. Indeed, an entrance one inch deep, full depth of hive, would allow the hives to be pretty well filled with snow during some of the storms we have sometimes. The hives used were eight-frame; but the frames were somewhat deeper than even the Jumbo size—a circumstance that favors outdoor wintering more or less, as the deeper frames are generally conceded to be somewhat better for wintering than the standard L. frame.

As nearly as I can recall from memory, the entrances were one inch deep, and varied from five to eight inches in width; but I can not for a moment think that a few inches more in size of hive entrance would have made any radical differences in the wintering results.

As already stated, the winter was a very

cold one, so I had abundant facilities for testing the two styles of winter protection as mentioned by Mr. Miller, as in the yard were also about 80 colonies wintered in packed hives. After quite a long spell of cold weather it was found on examination that the sides and ends of the paper-packed hives were coated with frost very heavily, while in the packed hives very little was found on any hives, while many showed none at all. Now, I am well aware that a cluster of bees, to a wonderful degree, can prevent radiation of heat from the cluster, yet *some* heat must leave the cluster, else how could the condensed moisture on the sides and ends of the hives be explained? Then if the packed hives were no warmer than the papered ones, why the absence of frost on the sides and ends, when on the walls of the papered hives the frost was so much in evidence? Mr. Miller says that, if moisture does collect in the hive, the first mild and sunny day will dissipate much of it. On the hives I have under discussion, when a mild day came the moisture would run in streams out of the entrance and would often freeze there toward evening or at a time when the sun would not strike the front of the hive. All winter they gave me trouble, and before the winter was half over I knew that it was all up with the most of them, and the following May only five or six were alive, and they were only weaklings at that. How about the other 80 colonies wintered in packed hives? Writing from memory, the bees wintered in perfect shape with only the loss of three or four colonies from queenlessness, etc. Why the difference in results, if the manner of packing was not the main essential in the transaction? At the time, I said something about my experience, in one of the journals, and Mr. Miller said that he did not recommend the plan for our Ontario climate. In his present article he makes no exception to climatic conditions; and as thousands of colonies are wintered outdoors in our latitude, he probably thinks the plan he recommends will be all right wherever bees are wintered successfully outdoors.

Regarding the temperature of the hives away from the cluster, it seems quite rearonable to believe that the air would be as cold inside as outside in a hive with no protection except paper, and with an entrance 14 inches long and 1 inch deep. That is on a par with opening the door of our living-room during zero weather.

When it comes to protected hives, then I will assume the "show me" attitude till I am convinced. Go to one of the winter cases with four colonies packed close together inside, as described by Mr. Holtermann in a recent article in GLEANINGS. Lift off the packing from the tops of the hives and note all four clusters in a circle around where the four hives meet one another. See the entire absence of frosty walls (provided there is ample protection of dry material between hives and case) and dry condition of the combs; and if you are not convinced that the air in such hives is warmer than that outside of hives, it will only be when a thermometer under proper conditions has proved otherwise. As to the absence of frost on the walls of the hives, possibly the absorbent material around them accounts for the difference. The main thing I look at is that it *is absent*, while on the papered hives it is always present in very cold weather.

I have tried the black paper for spring protection; and when I say that, besides the bees wintering outdoors, I have 300 colonies inside, and would not thank anybody to paper the whole outfit gratis when they are taken out in the spring, anybody can understand my position on the question without going into detail. My main objection is that the black paper around the hives warms up the hives too much during sunshine and causes undue disturbance, the bees flying out only to perish outside. Mr. Miller covers this point by insisting on large entrances; but as I do not like an entrance in the spring as large as specified by him, the difficulty I mention could not be overcome. Some packing *over* the brood-nest in the spring is, in my estimation, worth more than many sheets of paper around the sides and ends. I have wintered bees in hives prepared as he says, even in our climate, and they sometimes came through fairly strong. But when such was the case, the winters were not as severe as the one during which we lost so heavily.

Another important matter is that every colony wintered with the *minimum* of protection consumed a *maximum* of stores, so in the end any apparent saving in the cost of winter cases was more than made up in increased consumption of stores and weakened vitality of the bees. For seven years in succession I wintered a strong colony in a very large hive, with no protection except packing over the top inside of a super. A hole near the top of the hive would allow me to see the cluster in zero weather, and they wintered well every winter in spite of no protection; but they always consumed about twice as much stores as the protected colonies. While seasoned bee-keepers in climates like ours are not likely to try doing away with protection for their bees, there is danger of some fellow doing as I did some years ago; and all such I would urge to go slow, and test the matter well before risking too much.

Very strong colonies with a very large amount of good stores will winter any old way; but, generally speaking, the apiaries given the best protection during the winter and spring will give the best results in the honey-flow; and I feel pretty sure that, if Mr. Miller were in our locality, and wintering outdoors, he would soon modify his statements as to the relative values of papered hives, and hives in cases with abundance of dry material to protect from the cold winds and take up any moisture that may collect in the hives. If experience proved otherwise, I would be one of the first to quit

spending money for something worse than useless.

Mr. Miller says that "bees in the thin hive *get more rapid change of temperature*, but no *greater extremes*." I agree to the first clause of the statement unreservedly, but dispute the second just as strongly. During very cold days in the latter end of January and early in February, whenever the sun would shine brightly for a few hours the bees in the paper-covered hives would be warmed up to such an extent that the clusters would be broken more or less, and the bees become quite uneasy. This condition repeated at various times was a factor that worked havoc to the bees in these *thin hives*, while such short periods of sunshine did *not* affect the bees in the packed hives, for they wintered in splendid condition.

THERMOMETER READINGS SHOW AVERAGE DIFFERENCE OF 35° BETWEEN OUTSIDE AND INSIDE.

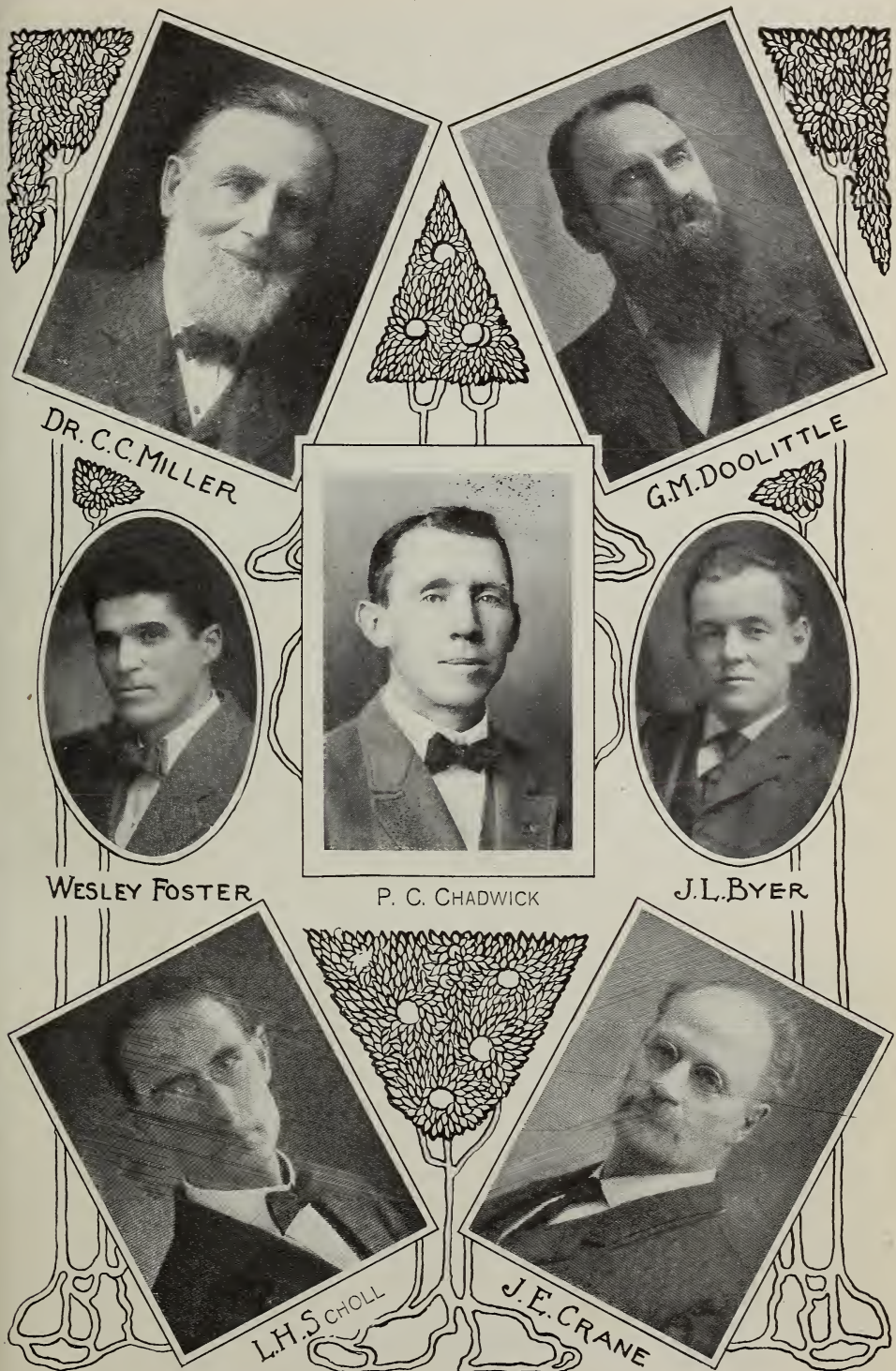
Jan. 5 gave signs of a real cold wave visiting us, so a hive was selected for an experiment. The hive is a very large one—12 frames, L. length, and somewhat deeper than the Jumbo style—what some would call a veritable barn. It is a regular packed hive with a double bottom, two inches of sawdust being between the case and hive proper. The outside case is of half-inch stuff. The entrance is ½×10 inches, lined inside with paper, and then there is a filling of four inches of dry sawdust between the case and inner hive of inch material. Over the frames is a porous quilt, and on top of that two sacks; without, ten inches deep of sawdust and chaff mixed. Over that is a roof of galvanized iron, and between roof and packing is an air-space of ten or twelve inches. The hive has ten frames and a division-board, which leaves a space of one frame at the side of the hive unoccupied. The division-board was shifted to the outside, and the thermometer suspended between it and the outside comb. The colony is strong, and occupied seven spaces when the weather was at zero, no bees being next to the comb beside the thermometer; but the fringe of the cluster reached to the next space. All that was necessary to do to see the thermometer was to lift off the gable cover quietly, turn back the corner of the sack with the packing, and lift the corner of the quilt. Friday afternoon the temperature had reached zero, and was on the down grade. The thermometer was put in the hive at 4 P.M. The following are the readings for three days in succession.

Saturday, 8 A.M.—Very clear and quiet; 15 below zero outdoors; inside the hive, 34 above. Saturday, 5 P.M.—Zero outside; 40 inside hive; sun had shone brightly all day. Sunday, 8 A.M.—Zero, cloudy all day; inside hive, 35. Sunday, 5 P.M.—1 below zero outside; 36 above, inside. Monday, 8 A.M.—Stormy; cold wind blowing right in the entrance all day; 4 above zero; inside hive, 34 above. Monday, 5 P.M.—16 above, outside, and 36 above in the hive.

Mt. Joy, Ont., Can.

[With a large entrance on one side of the cluster, a single-walled hive, and only one thickness of tarred paper around the hive, we should hardly expect the temperature inside to be very much different from that on the outside. In order to determine the conditions in and outside of a *double-walled packed hive*, with 7 inches of packing on top and 2⅛ between the walls, we took a number of temperature readings at our home yard. A series of colonies in such hives were selected at random. A thermometer was placed in different parts of the brood-nest, and in one case in particular it was let through a hole in the super-cover, the upper portion sticking up into the packing, so that a reading could be taken without opening the brood-nest. Here are some of the readings we took off where the cover and packing was removed and the thermometer examined before the mercury could possibly change:

Jan. 3, outside, 22 F.; inside temperature of first hive, 60; second hive, same day, 58; third hive, same day, 50; fourth hive, 50; fifth hive, 63. In explanation of these variations we would say that the temperature would have been the same in all the hives within one or two degrees if the thermometer had been placed the same distance from the cluster. In hives 1 and 2 the bulb of the thermometer was placed within two inches of the cluster, and hence the higher reading. On Jan. 5, with a temperature of 7 above, we bored a hole through a super cover, placing the bulb of a tested dairy thermometer clear to the back end of the hive as far away from the cluster as possible. Here are the readings: In the afternoon, about five hours after the thermometer was inserted in the hole, a reading was taken that showed 7 above outside, and 26 inside. Jan. 6, 7 A. M., the outside temperature was 5 below; inside temperature, 20 above. On the same day, at 2:20, the outside temperature was 10 above; inside temperature, 28. Jan. 8, outside temperature 29 above; inside, 28. But on that day the temperature outside rose rapidly from zero in the morning to 29 above. It is, therefore, plain why the inside should have been 28. But right here our experience teaches us that rapid changes of temperature inside of the hive for this locality are detrimental, because they break up the cluster, causing excitement when the bees should be kept quiet. Again, Jan. 8, the outside temperature was 4 above; inside, 28 above. As we are located in a warmer climate than Mr. Byer we do not use as heavy a packing. Perhaps it would be better if we did, for we notice that his inside temperatures are relatively higher. Rhode Island has a milder climate, and much more moisture than most northern localities near the great lakes, and it is no doubt true that it is an advantage to have large entrances; but we can not get away from the conclusion that more packing would save a considerable amount of stores. See further comments on this question in the Editorial department.—ED.]



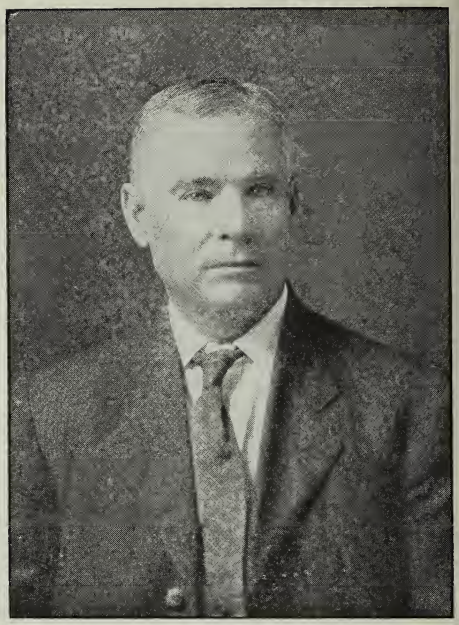
By request we are reproducing herewith the pictures of our department editors, believing that one likes to see what "manner of men" the regular contributors are. Mr. P. C .Chadwick is our new correspondent from California.

BEE-KEEPING ON THE APPALACHICOLA RIVER, FLORIDA.

Locating Whole Apiaries up on Stilts or Benches, above the High-water Mark.

BY E. R. ROOT.

In our previous issue I told you something about the wonderful possibilities in the way of honey production along the banks of the Appalachicola River, and I promised to take you to some of the apiaries where the hives are located clear up in the air on benches above the high-water mark of the river. Before doing this I wish to introduce to you our host, Mr. A. B. Marchant, whose apiaries we have been visiting, and whose methods for taking honey we have been considering. He is only slightly older than myself, and that means he is still a young man, of course, even if I am within five months of being half a century old. I do not need to say any thing more about Mr. Marchant as a bee-keeper, more than to mention that he has taken as high as 250 barrels of honey in 26 days. A man may know how to spin fine theories. He may be, indeed, a fine bee-keeper; but unless he can make those theories and that expert knowledge pan out into *results*, he is not a successful bee-keeper. Mr. Marchant is not only a bee-keeper, but a honey-producer. 'Nough said.



A. B. MARCHANT.

He invited me to take a trip with him down the river in his gasoline-launch, and, of course, I accepted the invitation. In this Appalachicola region an automobile would be out of the question, mainly because of deep sand and lack of roads; but a gasoline-launch is almost a thing of necessity, for with it a bee-keeper can visit his yards as often as he pleases, and haul his supplies and honey back and forth with the greatest convenience.

We walked down the wharf where we saw those big loads of honey, and stepped aboard his launch called the Dixie, and glided out into the river, the engine going "tuppy, tuppy," as we went. The water is clear and deep, and the fishing superb.

As the little craft goes down the stream toward Appalachicola, beautiful scenery opens up at every turn of the river. Here and there a little stream empties into the big one, and up almost any of them one can find a good place to locate a bee-yard, providing, of course, he has the money and time to put his apiary up on platforms, six, eight, or ten feet above the ground. As we sat in the bow of the boat Mr. Marchant pointed out the tupelos along the river. I said:

"Mr. Marchant, why don't we see more bee-yards in this country?"

"Largely," said he, "because there are few places in which to put bees."

The banks of the stream are heavily covered with timber. Occasionally here and there one may no-

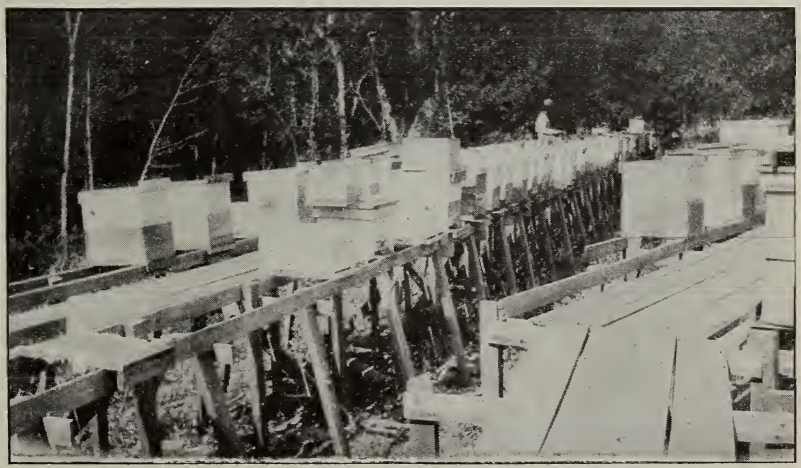
Marchant's gasoline-launch for going to and from bee-yards and to town.

R. L. Tucker's apiary on the Appalachicola River, elevated upon platform to avoid high water.

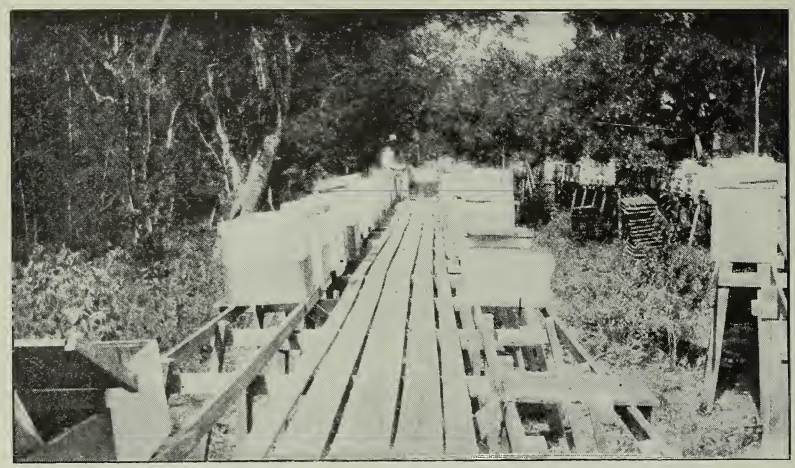
tice a clearing, but the ground is swampy and low, and therefore it becomes necessary for some who do locate here to go to considerable expense in making the elevated platforms, with a runway between the hives. Let us stop at one of these yards.

The subjoined illustrations show the apiary of Mr. R. L. Tucker, who has his post-office at Appalachicola. Here we see 360 hives of bees located clear up in the air. The different views will show the details of construction of the platforms and the convenient runways for a wheelbarrow down between the rows of hives. Notice how the platforms are braced, and that the hives are set up on side racks, I should say two feet above the general runway. When the platforms are finally constructed Mr. Tucker has a location for a bee-yard as good as he can ask—no grass, no weeds, no shrubbery —just nice board sidewalks to every hive.

At one end of the "apiary," and also on stilts, is a small building where the owner himself can eat and sleep, put together his supplies, put in foundation, extract his honey, etc. At the time of my visit Mr. Tucker had been sick a few days—whether from malaria or what, I do not know; but, unfortunately, this low marshy land, while it may be ideal for an apiary up on stilts, is, apparently, not an ideal place for the owner to spend several months during the height of the season; and this may explain why there are not more bee-keepers in this coun-



Tucker's apiary, showing the detail of the high benches.



The handy board sidewalks between the hives.

try that furnishes, I might say, shiploads of honey, much of which is now going to waste.

Again we board the launch. As we go "tuppy, tuppy" down the stream we find other bee-keepers located a good deal like those already shown. For example, Mr. B. F. Tucker, at Bluffston, has between 250 and 300 colonies.

As we hasten down toward Appalachicola we make no more stops. But I said to myself, "If it were not for malaria and mosquitoes, this would be the greatest bee-keeper's paradise I ever struck in all the United States, and I have now traveled nearly every foot of territory where bees are known to thrive." I doubt if this country will ever be overstocked.

Our friend Mr. A. B. Marchant, at Marchant's Landing, must be better located than most of the bee-keepers on the river. He is on comparatively high ground, on good land where he can do any thing else he pleases. Unfortunately our friend has suffered severely from two fires, losing his home in both cases, and, unfortunately, his business has increased to such an extent that he finds himself with too many irons in the fire. Besides a sawmill, bee-ranch, and orange-grove, he is also extensively engaged in queen-rearing. As we went down the river out into the Appalachicola Bay he showed me islands off in the distance where queens could be mated to choice drones. He has not worked out the scheme yet, but hopes, before another season rolls by, to furnish island-bred queens mated to choice hand-picked drones. The islands are just far enough from the main land to furnish ideal conditions. If he can possibly get the time he will give us the benefit of his experiments along this line.

I can not drop this Appalachicola district without referring to one or more prominent bee-keepers in that section, whom I was unable to visit at this time. For instance, there is Mr. S. S. Alderman, at Wewahitchka, further up the river. At one time he had as many as 1500 colonies, but now he has only 1000. He does not employ a number of men to work for him, but farms his bees out on shares.

THE BEE-STING CURE FOR RHEUMATISM.

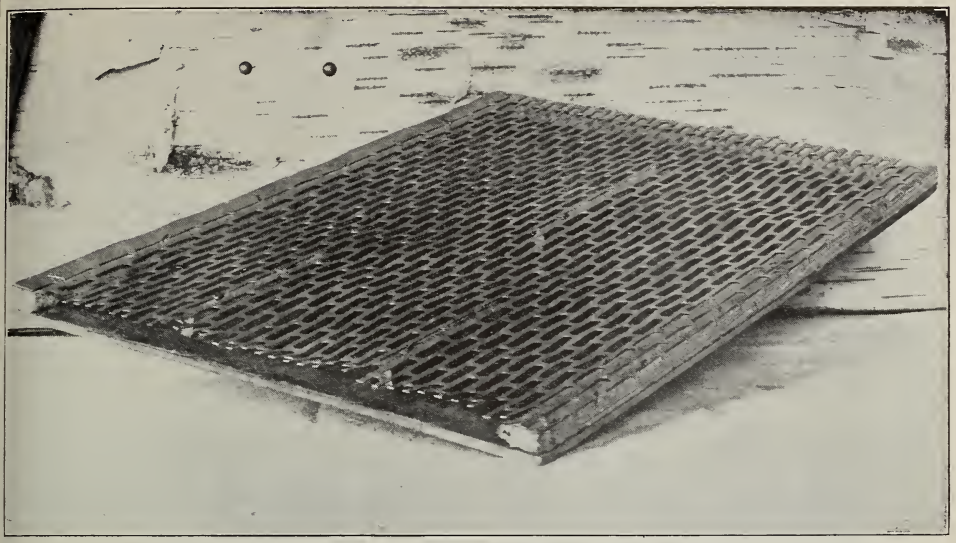
[The following letter was sent to Mr. Fred W. Muth, who, because of the widespread interest shown in the bee-sting cure, sent it on to GLEANINGS together with his reply.—ED.]

I am a sufferer from arthritis (chronic rheumatism) of the joints — some call it rheumatic gout. I have just read the article in *Country Life in America* for December on your application of the bee-sting on Mr. Renner's arm for his rheumatism. I decided, at any rate, to trespass upon your courtesy and ask for your opinion, as you have had experience. We have few bees near by. Is the sting of all species of bees equally efficacious? about how long a time is required to inoculate the system with the formic acid from the bee? I have a long vacation in the summer, and I am wondering if I could have you get your bees to work on me next summer? I would gladly meet any reasonable expense. Please advise. I have little or no rheumatism in the muscles — all in stiffened, swollen joints. Could the sting be applied there? I have tried all known remedies, but nothing is of the least service. I am ready for something heroic, and sincerely trust you will do a sufferer from a terrible disease the courtesy of telling him whether you would be willing later to try your bee cure on him.

G. PRENTICE CARSON.

De Land, Fla., Dec. 8.

[The writer is not a specialist on this subject, and can not advise whether all kinds of rheumatism can be cured by bee-stings. On the other hand, were I a sufferer from rheumatism as you are I would surely try



Forsythe's queen-finding sieve that slides in the entrance of the hive.

stings, for it costs nothing, and the writer believes it will do more good than harm, and harm it can not do, for we have never known a practical bee-man to be afflicted with rheumatism. Some fifty years ago my father was a terrible sufferer from this dread disease, and purchased some bees for the express purpose of curing his rheumatism, and was never troubled afterward. It is the occasional sting while working with the bees that does the work.

Mr. Renner, in question, came to our apiary last spring of his own accord, as the last resort. For fifteen years he had been unable to work. Since the cold weather has set in he has not made his appearance, but has called up our office and tells me he has not felt better for many years, and that he is coming back next spring, for he firmly believes he will be entirely relieved.

If you will be the possessor of a few colonies of bees, and do the work among the bees yourself, we feel you will be most handsomely rewarded in your health.

FRED. W. MUTH.

Cincinnati, Ohio, Dec. 11.

QUEEN-FINDING SIEVE TO FIT IN HIVE-ENTRANCE.

BY ROBERT FORSYTH.

I am sending you a photograph of my queen-finding sieve as described on page 666, Nov. 1. I have given it a thorough trial, and do not see how any thing could be more simple or effective. When the sieve is slipped under the frames and the latter are shaken in front of the hive, no opportunity is given the bees to reënter the hive except through the sieve. When all have entered, pull out the sieve and you are sure to have the queen.

Claremont, N. H., Oct. 30.

BEE-KEEPING IN ENGLAND.

BY A. H. BOWEN.

Thanks to the influence of "Old Sol," who shone out in cloudless skies from early morn till dewy eve, the year 1911 ranks high in England among the seasons of recent years, for both the quality and the quantity of the crop are excellent. Indeed, had it not been for the stormy period in June and the fierce heat of July, the season would have been a record one; still, the result is satisfactory and most encouraging after two poor years.

With a fairly mild winter, bees came out in good condition, but the early spring proved unfavorable, and was bitterly cold, with the result that many colonies died out through lack of bees and stores.

This condition existed until the end of April, when the weather changed; and from then right on we enjoyed perfect bee days. Fruit-trees rapidly came into blossom, and colonies quickly built up until, at the beginning of June, many were on fourteen combs of brood, and occupying two supers.

All colonies located on the hills where the first flow is from sainfoin, were fed with syrup from about March, right on until the honey-flow. The syrup was given in slow tin feeders, and it was surprising how powerful the colonies became, just in time for the flow, which commenced early in June. A large quantity of unusually light honey was stored and quickly extracted, the wet combs being returned ready for the main clover harvest.

Two-foot log split open, exposing large colon bees.

Unfortunately, the weather broke up and continued showery and cool until July, when we again enjoyed a glorious period of sunshine, which lasted more or less until the end of August. The fierce heat somewhat scorched up the clover; but a fair quantity was collected from that source, and also from the lime-trees, which yielded well this year. From my own bees I secured an average of 35 lbs. per hive of comb and extracted honey, and also obtained a 25-per-cent increase. The strongest colony yielded 100 lbs. of extracted honey; the next, 85 lbs.; and from the remainder, quantities varying down to 10 sections.

When getting wet combs cleaned up after the last extracting I have found it advantageous to place them *under* the colonies instead of above, as is usually practiced. My method is to remove the colony from its floor-board, and put on two or three supers containing wet combs, then replace the colony on the top. The entrance is contracted to avoid robbing; and when honey has all been carried above, the supers are removed.

In this country bees are usually covered with quilts made of a coarse material such as felt carpet, or even cast-off garments; but I use a wooden quilt of my own manufacture, which answers the purpose admirably; for not only does it afford protection against both cold and damp, but it also provides a perfect winter passage. The excellent way in which bees winter when covered with this quilt has proved to me its very great value. I should like to convey to your readers some idea of the quiet beauty of the Cotswold, especially in September. Nature is then at her best; the cold bleak hills are clothed with the warmth of golden stubble, and the autumnal haze softens the landscape with those lights and shades which add so much of loveliness to a hill country; and suddenly, as we ramble along, a lovely valley is seen below; old-world farmhouses and ivy-covered cottages come into view, nestling among stately elms and beech-trees. On descending we come into a typical Cotswold village, with its manor house and Norman church, which stands out against the russet-tinted woods in the background. Passing through the village you will come across here and there in the cottage garden half a dozen skeps raised from the ground on logs of wood, and covered with a miscellaneous assortment of crocks, old sacks, tins, or any thing else which can be pressed into service. With the "gintlemen that pays the rint," and the proceeds from the sale of honey, cottagers are able to supplement their somewhat scanty wage.

But the great changes which are sweeping over our land have already invaded even such secluded Cotswold villages as these, and very soon the skep and thatched cottage will be a thing of the past.

Cheltenham, Gloucestershire, Eng.

A LARGE COLONY TAKEN FROM A TWO-FOOT LOG.

BY A. W. AAMODT.

Inclosed you will find a picture. This view of the split bee-log shown herewith was taken during the fore part of October. After some hard work we managed to get this log cut from a bee-tree which was two feet in diameter. We saved the bees and got a good strong colony. We gave them combs containing about 20 lbs. of honey, and, besides that, we got 19 lbs. for home use. The bees were hybrids, but we introduced a pure Italian queen, and by next summer we shall probably have a pure Italian colony.

St. Paul, Minn.

MEETING OF THE NORTHERN CALIFORNIA BEE-KEEPERS' ASSOCIATION.

A Plea for a State-wide Association.

BY W. A. H. GILSTRAP.

The sixth annual convention of the Northern California Bee-keepers' Association was held in Sacramento, Dec. 27 and 28, 1911. It was one of the most important meetings of honey-producers ever held on the coast. A veteran in the pursuit, who was unable to attend, thinks there have been few if any conventions of honey-producers in the United States which has had so beneficial results

as this one will have. To understand the situation, some historical evidence should be introduced.

Over twenty years ago the Southern California Bee-keepers' Association was formed, the projectors trying to interest those further north in the work. The name was soon changed to California State Bee-keepers' Association, and the effort continued to get all honey-producers in the State to combine. The writer knows this is fact.

Not much later the Central California Bee-keepers' Association was formed at Hanford, and possibly still exists. The Tulare County Bee-keepers' Association is about 17 years old; is well organized, and had two delegates present—Mr. Walker, of Tulare, its president, and Mr. Epperson, of Fresno. The Imperial country, in the southeastern part of the State, has an association, which, like the State association, is incorporated.

The writer was honored with the chairmanship of a committee dealing with organization and inspection. The former was reported substantially as follows:

All honey-producers in the State are requested to join the State association, which shall consist of northern, central, Imperial, southern, and any other divisions that may be formed. County clubs are to be formed in each division. For administrative purposes delegates are to be elected to each division from the county clubs, and to the State association from each division.

No law can be passed on inspection till next winter, and the committee's plan contemplated the above organization by that time. The main features of the plan are somewhat similar to the above in formation. The Governor of the State shall appoint a State board of apiarian examiners whose members shall not exceed the division of the State association in number, from a list of names to be submitted by the State association, and the Governor shall remove the same for cause. The board shall appoint a State inspector and county inspectors, and shall be paid actual expenses and per-diem salary by the State. The State inspector shall have laboratory facilities with the University of California or elsewhere; shall give necessary assistance to county inspectors, and shall cause necessary inspection to be done by competent persons in counties where there are no inspectors, at expense of counties where inspection is done. County inspectors shall appoint deputies when necessary; may remove them, and shall be responsible for their acts. All the above shall be under bonds, excepting the deputies. County inspectors and deputies are to be paid by the county.

While the above is from memory, it is close to the report submitted, which was turned over to the executive committee. After due amendment we hope it will be endorsed by all the associations in California.

The delegates from the State association, Sec. A. B. Shafner, Los Angeles, and Inspector J. W. Ferree, of Surrey, as well as the Tulare association delegates, were of much assistance, and worked untiringly for the general good.

The first day, State Entomologist Prof. C. W. Woodworth was up from Berkeley, and was frequently called on for advice. He said we should confer with the various societies of our industry for a law, take plenty of time to get it right, and then he would work for its passage. He has conducted a class in apiculture at the University for 17 years.

The last day, Dr. A. J. Cook, State Horticultural Commissioner, was with us for a while. To bee-keepers he will ever be "Prof. A. J. Cook." He spoke with much feeling of the older bee-keepers who have largely passed away, and assured us of the friendship of the bee-keepers at the south end of the State. He told us how Governor Johnson had lately called a special session of the legislature to manage an insect not as large as a house-fly. Twenty minutes after the legislature convened the desired measure became a law, and the legislature adjourned! He told us to prepare a good law and he would help us get it through. We enjoyed his talk immensely, even if he did "josh" us freely.

Our friends from the south told us that the State association reports its meetings to the papers, as it wants it done by a censor, and not as a reporter who knows nothing of our pursuit would do it. During the meeting the need of such a plan was glaringly apparent, and all bee-keepers' associations could well consider this point.

Mr. W. Gear, of Vorden, was elected secretary for the following year.

Ceres, Cal.

MOVING OVER 1000 MILES, AND SECURING 160 POUNDS PER COLONY.

BY B. F. SMITH, JR.

April 26 I received notice I was to be transferred from the Omaha to the Sheridan division of the C. B. & Q. R. R. The year 1910 was nearly a failure in our locality in Nebraska; but having fed my 23 colonies until each had 25 or more pounds of stores for outdoor wintering, I expected to find them in good shape for the trip. I found two dead and one with just a little bunch of bees with a drone-layer. This left just 20 with two doubtful ones, which I did not have time to examine.

About 2 P.M., with thermometer at 55, the covers were removed and wire cloth nailed on instead, thus leaving just a ⅜-inch space over frames. About 5 P.M. it was a little colder, and screens were tacked over the entrances, and the work of loading commenced. All household goods were loaded in one end of a 40-foot box car, and a rack or gallery built in the opposite end, upon which the covers, supers, and chaff-trays were loaded.

I had just enough one-inch boards to cover the bottom of the car in the end I intended for the bees, and on top of these I put

about a foot of straw, carefully smoothing out the bumps. The hives were loaded in four rows of five each, and held in place by 1×4 strips nailed to the sides of each hive with a straw bumper between end hives and car. The hive entrances were all toward the car door with about 3 feet between the top of the hives and the rack above. The rows extended nearly to the door; and between the doors I had five crates of chickens, a cot, chair, gasoline-stove, and water-barrel. As the last piece was loaded, the engine backed on to the car, and the start was made.

We had not reached the first station before I discovered that one pair of wheels on that car were not true, and at a certain speed every thing in the car danced in a fashion that made me sick. As it was on the opposite end from the bees I tried to hope it would be all right with them. About half the first night was spent in bracing the chicken-coops and putting packing in where I could to prevent chafing.

The trainmen on my old division handled my car in fine shape; but as soon as I was among strangers the way that car was hit, bumped, and jammed made me wish that some of those switchmen and engineers would have to ride over one division in a car like that.

There were eight divisions, and that meant eight switchings; and although the car was loaded by an expert loader, it had to be rebraced several times. The hives, however, did not move on their bed of straw.

Saturday morning we arrived at our destination in the Big Horn Basin, Wyoming, in the midst of a snow storm, and the bees remained in the car until Monday, making the total time just one week. I found the two doubtful colonies and the one weak one dead. The two had been queenless before loading, so that there were none but old bees. The smaller colony suffered because the frames slipped over. Some were Hoffman frames and some loose hanging; but only one of these moved. All the bees had been sprinkled four times daily except the two last days. Temperature ranged 50 to 75°.

The late storm destroyed all the fruit-bloom, and I commenced feeding May 15. On June 14 sweet clover started to yield; then alfalfa and wild licorice. The flow did not let up until frost, Sept. 20. All colonies were tiered up as high as I could lift the supers before any were removed. Three colonies were divided, but I had no swarms. In all, there was a crop of 3050 pounds of water-white extracted honey and 150 pounds of comb; and I had 20 colonies ready for winter.

During July I found a swarm in a rabbit-hole. It had evidently swarmed, as there was just a little sealed brood with several vacant queen-cells and a virgin queen. This colony I transferred to a hive, and it built up to six frames without assistance.

Cawley, Wyo.

[The usual plan is to locate the hives in the car so that the frames are parallel with the rails, so that, when switching is going on, and the car is constantly being bumped, there is not so much danger of breakage. Your record, however, was very good.—Ed.]

FENCES VERSUS SOLID SEPARATORS.

Narrow Versus Wide Cleats.

BY F. GREINER.

It is still vivid in my mind what trouble I experienced with the comb-honey supers which I used during the first few years of my bee-keeping in 1875 and thereafter; but I found something after a while that worked so well that even now I do not see the need of seeking for any thing better; and had I not been led to using no-beeway sections, which made it necessary to use either fences or cleated separators, I would have nothing more to say on that subject. When the no-beeway section was first brought out by Mr. Morton, a discussion arose as to how wide the vertical cleats should be, and it seems that one-fourth inch has been settled on, although at one time it appeared that three-fourths inch, or at least something much wider than the present regular width of one-fourth, would gain in favor; but of late, and for some years, our comb-honey producers have said nothing on the subject, which seems to be accepted as evidence that these narrow-cleated fences give the best of results and are satisfactory.

Now, it happened that, at the time I wanted to make my plain-section supers, fences could not be bought; none were offered for sale; and as the evidence seemed to be in favor of a wider cleat I made up my cleated separators with cleats three-fourths inch wide. Wishing to test fences also, I made up 25 sets of fences with narrow cleats one-fourth inch wide, as are commonly used now, except that the separator material was one-eighth inch thick instead of one-sixteenth, as the larger part of the fences in use are made. It also happened that, soon after this, I bought some 20 or 25 supers with fences of the narrow-cleat type. These supers of different styles have been in use ever since, which is quite a term of years, and now I desire to give my experience along this line.

I want to add that, a year ago, I wanted to increase my stock of supers; and, not wishing to spend much time in making up fences, which is a very laborious task when one has not machinery to do it with, I bought 500 Danzenbaker fences. All of these were used last season with the others. Now as to the result:

The smoothest honey has always been produced with the solid wood separator, whether cleated or not; i. e., whether it came out beeway or no beeway section-supers. There was always the least of what friend G. M. Doolittle called "mangled" honey with these solid separators.

The separators (or, rather, the fences of the 25 supers which were bought during the earlier time) were very flimsy; they were

only $\frac{1}{16}$ inch thick, and of very soft timber. My bees showed very little respect for them, and gnawed them in a frightful manner. They have long been out of commission, and the supers have been entirely remodeled to correspond with my regular stock. The resulting honey had always the washboard appearance, and many legs were attached to the faces and fences. There was another peculiarity of these supers; the combs in them ran crosswise of the frames in the brood-chambers, making it necessary to keep hives perfectly level both ways. This is, as every one knows, a very undesirable feature, and can not be tolerated except in house-apiaries or tenement hives.

The honey produced with the Danzenbaker fences also lacked in smoothness when compared with that produced with solid separators. But the feature I wanted to draw especial attention to as being the result of the narrowness of the cleats is this: The sealing of the cells next to the wood is quite often so drawn out as to be slightly attached to the cleats; and when the filled sections are removed from the supers this sealing is somewhat broken, and a leak is the result. This may not be very serious, for bee-keepers seem to be passing it by without making objections, although few have mentioned the matter. A wider cleat entirely prevents this trouble, as is clearly shown by the honey produced in my 100 or more supers provided with such wide cleats. The fences with the narrow ¼-inch cleats, which I made some fifteen or more years ago, have always given us the same trouble, more or less, just as the Danzenbaker fences did, but have stood the wear exceptionally well—probably because the material was good sound timber, and of good thickness. I doubt whether the thin Danzenbaker fences will endure like that. My suggestion would be to make thin separators or fences of hard wood—maple, elm, or something of that nature.

Before I forget it I want to say that we can get along with the "legs," or little attachments the bees are apt to build between the fences and the combs, much better than we can with the other nuisance mentioned, of having the sealings attached to the cleats. The legs are easily detached by running an eight-inch hack-saw blade through the bee-spaces where the attachments appear. Before unloading filled supers we stand them up on the bench so that the light will shine into the spaces; thus we readily see where there are any attachments. This past season we had some supers which looked very discouraging to us on account of the many legs. At first I thought I would not find a single suitable section in a whole case for shipment; but after sawing off the legs there was not a spoiled section to be found; while, had we omitted this, not a section in some of the worst cases would have been fit to ship. But we have no remedy to prevent mutilation when the sealings are attached to the cleats.

Naples, N. Y.

FOUNDATION SPLINTS.

How Made and How Used.

BY DR. C. C. MILLER.

M. C. Thompson, Milwaukee, Oregon, inquires about foundation splints. They are made by sawing and also by slicing. First the wood is cut into sheets $\frac{1}{16}$ of an inch in thickness. Then a number of sheets are laid together and cut into splints, making the splints $\frac{1}{16}$ of an inch square. A saw for the purpose must, of course, be very fine, and the slicing-machine is a large and powerful affair that I suppose is quite expensive. I have never made any splints, as I can buy them for 60 cents per thousand with an additional 10 cents for postage if sent by mail. I couldn't make them nor have them made locally for any such price. They would work all right if made long enough to reach from top to bottom-bar, but would be troublesome to put in, so they are made ¼ inch shorter than that. For a frame of Langstroth size, with top-bar ⅞ thick and bottom-bar ¼ thick, that makes the splint 7¼ inches long.

Broomcorn might work for splints, only it would take a good deal of care in selecting, and at that would not be of such uniform thickness as the spliced splints. I hardly think you would make satisfactory work splitting wood into splints, even if your cedar and fir are very straight-grained. But you can easily try it.

Now the manner of putting in the splints. The foundation is fastened to top and bottom bars, then the frame is laid over a board such as is commonly in use, being made to fit rather loosely inside the frame with stops on the edges to allow the foundation to rest on the board. The splints are thrown into a square shallow tin pan that contains hot beeswax. They will froth up because of the moisture frying out of them. When the frothing ceases, and the splints are saturated with wax, then they are ready for use. With a pair of plyers a splint is lifted out of the wax (kept just hot enough over a stove), and placed upon the foundation so that the splint shall be perpendicular when the frame is hung in the hive. As fast as a splint is laid in place an assistant immediately presses it down into the foundation with the wetted edge of a thin board.

I have used different makes of brood-foundation with splints, and of different weights—heavy, medium, and light. About 1½ inches from each end-bar is placed a splint, and between these three other splints at equal distances, making five splints in the frame. This for heavy or medium foundation. For light foundation I have used seven splints to the frame.

I see no reason why the plan given by Mr. Atwater, in April *Review*, should not work all right.

If splints are given when the bees are not busy gathering nectar and building comb, they will be gnawed out. The thinner the foundation the more likely the gnawing.

Heads of Grain from Different Fields

How Often is it Necessary to Inspect Colonies for Foul Brood?

Dr. C. C. Miller:—How often would you recommend examining hives for foul brood, and at what season of the year? In April or May I examined a colony that acted strangely, and found about one-fifth of the unsealed brood dead and black. In three weeks all cells were cleaned out, and being filled with eggs and larvæ; but about a third of the worker-cells hatched out all drones. No more disease appeared. I pronounced it pickled brood. These bees were dark hybrids.

In August I killed the queen, which was a fine-looking one, and introduced a golden Italian one in her place. Soon beautiful bees began to hatch; but within ten days from the time they began to fly out, there would be from four to seven dead ones on the alighting-board. But there were no old nor hybrid bees among the dead ones. The unhatched brood was healthy. Why did the young bees that had never done field work die off? At present all seems to be well.

Gewda Springs, Kan., Dec. 9. D. W. HOLLAND.

[Dr. Miller replies:]

Of course there's no use looking any time before brood is present in spring, nor, indeed, for some time after. Wait till colonies have built up into prosperous condition and are bringing in honey. From that time until brood-rearing ceases in the fall it will be well to make an inspection every two or three weeks if foul brood is in the apiary, either for treatment or to make sure that no treatment is needed.

You are likely right in attributing that 20 per cent of dead brood to the pickled-brood business, if we may call starved or chilled brood pickled brood. But the drones from worker-cells should be charged to a defective queen. The dead young Italians may likely be charged to the larvæ of the moth. These run their galleries along the surface of the sealed brood, mutilating the young bees, which are then thrown out. C. C. MILLER.

When is the Best Time to Remove Old Crooked Combs?

Are Jumbo frames self-spacing?

What is the best way to remove old useless brood-comb from the hive so that there shall be as little waste as possible of honey, brood, and pollen?

I have no honey-extractor. Some of my colonies have contracted foul brood, and I find that it is those colonies that have old brood-combs.

Bainham, N. Z. E. B. LANGFORD.

[The Jumbo frames are usually self-spacing of the Hoffman type.

If colonies require feeding in the fall, old crooked combs can be gotten rid of very easily at such a time by removing them before the feeding is done, and then contracting the size of the brood-chamber to accommodate the combs left which contain the winter stores.

Early in the spring a great many poor combs can be taken away; and a little later, when the bees begin to need more room, frames of foundation can be substituted.

During swarming time the old combs may be removed entirely, and the bees shaken on to full sheets of comb foundation. The old brood-combs are then stacked up, the young bees allowed to hatch, and then, after three weeks, these young bees shaken in front of various colonies in the yard that may need strengthening. The old combs are then empty and may be rendered up.—ED.]

Capping-melters Darken Amber Honeys.

I am one of the oldest bee-keepers in Australia, and for a long time the largest, although I do not think I am at present. I have had a bottling establishment in Sydney for a number of years; and as it was always necessary to use heat I had considerable experience of the effect of heat on different honeys. There are some honeys gathered in Australia of good consistency and flavor, and very light color, which a capping-melter would not injure much; but the majority of darker honeys it would damage to a great extent. There are some honeys here that will not stand heat at all; and if they candy it is better to let them go in that state than to attempt to liquefy them, as they get so dark and rank. For that reason a capping-heater would be of no use to me, nor, I think, to the majority of Australian bee-keepers. If I used one I would certainly keep the honey apart and sell it on its merits. I would not allow it to run into the tank.

Mr. Beuhne is, I think, peculiarly situated, inasmuch as he has a location which gives him a very large yield of light honey—the sort which receives the minimum amount of damage by the application of heat. Both here and on my other farms, 400 miles south, I get some honey which I could safely put through a capping-heater, but I get a lot which I could not.

Cappings are undoubtedly a nuisance—that is to say, the accumulations during extracting are; and the only merit a heater has, in my opinion, is to get them out of the way quickly; but if this is done at the expense of the quality of the honey the advantage is a doubtful one. I will tell you later on, if you care to know, how we manage with our cappings. MAJOR SHALLARD.

South Woodburn, N S. W., Australia.

[We are very glad to use what you have to say regarding capping-melters; and we should be pleased to have you continue the subject, and tell how *you* dispose of cappings.—ED.]

A Swarm that Issued when the Queens were Ready to Hatch.

One Sunday morning in July we noticed that a swarm had just gone out of one of our hives previous to our visit; and in order to make sure from which hive the swarm came we opened the one which, the previous day, seemed about to swarm. This happened to be the right hive; and on examining the frames we saw two or three queen-cells on which the caps were so loose from the young queens trying to free themselves that we had no trouble in removing the caps with our fingers and releasing the young queens, which immediately ran out on the frames. That was the first time in our experience that we had so good an opportunity to test this much-mooted question. We think this bears out your experience also, that the young queens hatch at or about the time the old queen goes out with the swarm.

Clamart, France, Nov. 21. GEO. STEPHENS.

[There has been plenty of proof to show that the swarm *occasionally* issues about the time the cells hatch; but it seems likely that, in the majority of cases, it comes out about a week in advance. Unfavorable weather conditions probably account for the occasional delays.—ED.]

Will Honey Transmit European Foul Brood?

I wish to know if European foul brood might be transferred from place to place in the honey. I understand that it is fully admitted that the American type is. Will honey extracted from an apiary containing European foul brood, and shipped to another State, and fed to bees, bring on disease?

Kerman, Cal., Dec. 13. CHAS. A. LEE.

[This letter was referred to Dr. E. F. Phillips, who replies:]

The question raised is, of course, important; but I know of no way to answer it definitely. The cause of European foul brood is not known, and therefore we would not know what to look for in the honey. Furthermore, even for American foul brood (which we know is carried in honey) it is difficult to find the organisms. Some practical experiences would certainly indicate that European foul brood is carried in honey; but, on the other hand, the success which is sometimes experienced with the dequeening method of treatment makes this somewhat questionable. Every phase of this disease is a puzzle, and one who can speak definitely of it usually does not know. E. F. PHILLIPS,

In Charge of Apiculture.

Bees Returned to Old Location when Set out for a Midwinter Flight.

The mercury rose to 66 degrees, so I ventured to set my bees out for a flight, and they flew freely all day. I set them on the opposite side of the house, and some of the bees hung around the old stands, but returned all right. That shows their memory.

Derby, Vt., Dec. 12. W. H. WILSON.

Italians are Gentler and Produce More Honey, but they Also Swarm Worse.

For some years I have had a yard of black bees about three miles from home, while at home I have only Italians; and I have endeavored in every way to arrive at the truth in the matter as to which is really the better under all ordinary conditions. At first I thought the Italians were the better; then one season caused me to change my opinion, and I have now come to the conclusion that I prefer Italians; but I think there is really but a very little difference as to the amount of honey gathered by each race. While the Italians have proven to be a little ahead in the amount of honey gathered, they have overbalanced this by being worse to swarm, especially early in the spring, before there is any honey of notice to gather.

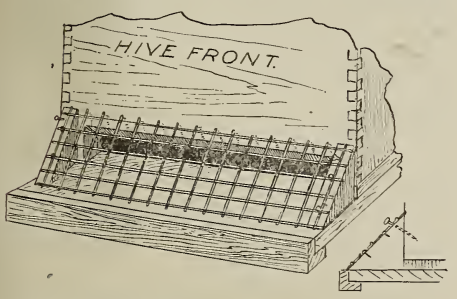
Another difference that I have never seen mentioned is that the blacks are not nearly as apt to use up their stores by rearing brood early and late in the season. I have rarely found a black colony starving in the winter or spring, while this is almost the rule with Italians here, as they nearly always require more or less feeding, either in the fall or spring.

On the score of gentleness the Italians are far ahead of the blacks, as the latter will sting much worse, and are so nervous that they will fall from the combs to the ground, where they will scramble about and crawl under one's clothes if possible. I am pretty sure that the Italians slightly excel as honey-gatherers, and very much so as to gentleness and ease with which they may be handled. Taking every thing into consideration I now prefer Italians; but it is a great deal more trouble to keep them pure, as there are always some blacks in the neighborhood, either in trees in the woods or in hives. I find that this is to some extent the case in most of the country, as a great many queen-breeders send out queens that produce hybrids which are as cross as cross can be. I have had hives of hybrids that were so cross that an inexperienced person would have been in danger if he had tried to handle them.

Stonecoal, W. Va., Dec. 1. W. C. MOLLETT.

Mouse-proof Entrance.

During cold weather there is often great damage done by field mice where the hives are left on the summer stands and the entrances left unprotected; but if a wire mouse-screen, like the sample I am sending you, is used, there will be no trouble at all



from mice, and the bees can pass out and in freely when the weather is warm enough for them to fly. I first bevel the entrance as shown, and I find that the bees pass in and out with much greater facility than with the ordinary entrance.

Wilkinsburg, Pa. W. D. KEYES.

Bees Uneasy Because of Low Temperature in the Cellar.

Why are my bees restless in the cellar with the temperature down to 32°, and the air good? They keep up a constant buzzing, and a few come out and die.

Glenwood City, Wis., Jan. 12. J. E. COOK.

[The trouble with your bees is undoubtedly because the temperature of the cellar is too low. It should seldom go below 45° F.; and when it goes below 40 the bees are apt to roar or show that they are uneasy. Dr. C. C. Miller, in one of his articles some time ago, described how he quieted his bees by raising the temperature.

This roaring may be caused by bad air, even though the temperature be right; or it may be caused by too low a temperature, even in good air, It may be advisable for you to put artificial heat in your cellar. The best way, of course, is to put a small drum stove, burning hard coal, or something that will give a steady heat, down in the cellar, connecting the same to a chimney reaching down through the floor. Of course, if you can not apply this kind of stove you might use a large coal-oil lamp; but this makes the air of the cellar very foul. When the temperature of the cellar is as low as 32°, and you have no means of raising it, your bees will be almost sure to die before spring.—ED.]

Association of Apiary Inspectors of the United States and Canada.

On Dec. 30, 1911, in Washington, D. C., there was formed a temporary organization of the above name with a view to increasing the efficiency of apiary inspection and to bring about a greater uniformity in the laws, and more active coöperation between the various inspectors.

A committee on permanent organization was formed, to report at a meeting to be held in Cleveland, O., in December, 1912, in connection with the meeting of the Association of Economic Entomologists. Prof. Wilmon Newell, College Station, Texas, is chairman of this committee.

A standing committee was also appointed on legislation for the purpose of drawing up a law incorporating the necessary and desirable features. The undersigned was appointed chairman of this committee.

All apiary inspectors and official entomologists of the United States and Canada who are interested in the advancement of apiculture are invited and urged to join in this movement for an increased efficiency in the fight against brood diseases. For the present it was decided to levy an assessment of $1.00 per year on each member to defray necessary expenses. It is hoped that arrangements may later be perfected for affiliation with the Association of Economic Entomologists. Requests for membership and the assessment may be sent to the undersigned.

E. F. PHILLIPS,
Bureau of Entomology, Washington, D. C.,
Secretary.

DR. BURTON N. GATES, Amherst, Mass.,
Chairman.

Cellar Wintering Best when Bees can Not Fly for Over Five Months.

On page 741, Dec. 15, I note your statement, "It takes much less skill and time to winter bees outdoors," and "The average beginner will succeed better by it." I would take exception to both of those statements, especially for a man who lives as far north as I do, and in as cold a climate. Last winter my bees were without a flight for 5 months and 17 days; nor was there one day when they could have had a flight even if they had been outdoors. I lost 6 colonies out of 86.

Last year my bees had their last flight October 18, and there has not been a day since when they could have flown. I put them in the cellar Nov. 3.

We had one night in November when the mercury was 28 below zero. There have been several nights when the temperature has been to zero. The night of Jan. 1 the temperature was 35° below zero; Jan. 2, 26 below; to-night, Jan. 3, it is 24 below; and at no time in the last three days has it been warmer than 14 below zero. I think I had better stick to cellar wintering.

Robbins, Wis. G. C. CHASE.

Clipping does Not Impair the Usefulness of a Queen.

Clipping queens, in my experience of over twenty-five years, does not usually in any way impair their usefulness or shorten their lives—at least they often live three or four years after being clipped—p. 523. Sept. 1. I usually cut square across all the wings, taking off about half of each.

If you want to kill bumble-bees or yellow-jackets, put some gasoline in a spring-bottom oil-can and squirt it into the nests. Do it before you stir them up. Bumble-bees can be handled by using smoke.

Payson, Ill., Dec. 29. DANIEL E. ROBBINS.

Watering Bees in a Cellar.

I noticed in March, last year, my bees began to raise brood, in consequence of which they became very restless, after which I gave each colony a little saucer of water, which seemed to satisfy them. Is this the right thing to do?

Omaha, Neb., Jan. 5. H. C. Cook.

[Water has been given the bees while in the cellar by some bee-keepers, and in a few cases it has seemed to quiet them. Whether it is because they needed the water for brood-rearing or what, we can not say. A good deal will depend upon local conditions. If water does encourage bees to rear brood, we would say that we would question the advisability of giving it to them in the cellar, because brood-rearing too early in the spring would be a disadvantage. The bees would be uneasy, rouse up, and make the colony too warm, and render it difficult to control the conditions properly.—Ed.]

A Diagonal Line of Drone-cells.

A colony of bees superseded its queen in July. Several of the virgins being of good stock they were secured. They started laying Aug. 17. Two, that proved to be purely mated, were saved. These queens are somewhat slender in body, but apparently prolific. The brood is compact and regular, with the exception that drone brood is placed in worker-cells running in almost perfect lines of single cells diagonally across the comb. Some drone comb in the supers, to which these queens had access, was neglected. About the time the drones reared in the worker-cells matured they were cast out. During August and September two successive lots of drones were reared that way. Each lot consisted of about 100 such drones. I am a beginner; and, with the exception of some little drone brood appearing in worker-cells in the early spring, I have not experienced this condition. What do you think of these queens?

Philadelphia, Pa., Jan. 13. E. Rohner.

[Perhaps these particular combs that contained drone brood had sagged so that a line of cells was stretched large enough so the queen laid drone eggs in them. It is hard to conceive of only one line of cells being stretched in this way; but this is the only explanation we can think of. If these combs are wired diagonally this might have something to do with the matter. You had better watch those queens next season.—Ed.]

Greasy Waste Dangerous.

I note what you have to say concerning the footnote to my comments on cotton as smoker fuel, p. 664, Nov. 1. Greasy waste is nasty to handle. Reload the smoker and then handle some snowy sections of honey. It is dangerous to leave about. Its tendency to spontaneous combustion is great, particularly when it contains certain oils and greases, and the smoke from it stinks. There are plenty of better things. Plain cotton, in waste rags, or yarn, always makes trouble for me when used as smoker fuel. Mr. Latham is very emphatic in its condemnation. Repeated use of tobacco, say on several consecutive days, often causes trouble.

Providence, R. I. Arthur C. Miller.

[If a little care is used as to the place where the waste is kept, there is no danger of a fire. The great advantage of this fuel over any other that we have tried is that it lights at the touch of a match, does not make a hot fire, and never goes out until it is all used up.—Ed.]

Meeting of the Ventura County Club.

At a meeting of the Ventura County Bee-keepers' Club, held at Fillmore, Cal., January 6, 1912, it was unanimously voted to join in a body the California State Bee-keepers' Association. Inspector Allen was upheld in the matter of quarantining all bees and queens from outside the county, on account of brood diseases. All queens and bees shipped into Ventura Co. must bear an inspector's certificate or they will be destroyed when they arrive.

Santa Paula, Cal. E. F. McDonald, Sec.

"Grandma" Wilson a Honey Salesman.

I wonder whether Dr. Miller realized what a fine salesman he had when he started that fine old lady on the road, page 659, Nov. 1. I have no means of knowing just how much she has benefited other bee-keepers, but I know she has sold quite a few pounds of honey for me. If bee-keepers did but know it, right here is the secret of successful advertising. Let those with large healthy families or healthy old folks who consume honey regularly have photos taken, and have them published in their local papers, and they will often be copied widely. These articles are always interesting. I clipped the inclosed from the Philadelphia *Record*.

East Stroudsburg, Pa. George H. Bedford.

[The clipping sent was a copy of the article as it appeared in Gleanings, picture and all. Yes, such items do good.—Ed.]

Camphor in the Carbolic-cloth Solution.

Carbolic cloths can not be surpassed by any kind of smoker. I have handled blacks and hybrids, of very vicious temper, with the greatest of ease, and under many adverse conditions, as well as Italians. I procure a 4-oz. medicine-bottle and get 1 oz. of pure carbolic acid, also 2 oz. of camphor. Get a pestle and mortar and break the camphor up fine, then pour on the carbolic; and after it has dissolved the camphor, bottle for use. The reason I mention a 4-oz. bottle is that I have always found it handy in my pocket when out.

Toronto, Ont. R. V. Keyhoe.

How Many Kinds of Italian Bees are there?

What kind of Italian bee is the best? How far would it do to ship colonies of bees? I should like to buy some this spring. A. T. Danielson.

[There are but two main divisions or kinds of Italian bees—the leather-colored (often called the three-banded) and the five-banded. The latter bees have been bred especially for the color, and sometimes are more irritable and less hardy than the former. The red-clover Italians are simply one strain of the ordinary leather-colored.

Bees may be shipped almost any distance. By express it is possible to ship across the country; and if the bees are prepared in good shape they should go through all right.—Ed.]

No More Bees Shipped into Imperial Co., California.

At a meeting of the Board of Supervisors of this county an ordinance was passed for the protection of the bee industry of this county. This goes into effect Feb. 1, 1912. On and after that date no more bees will be permitted to be brought into this county. This act became necessary because so many bees were being brought in from infected counties. This county contains about 11,000 colonies of bees; and with prospects of a poor season in coast counties there was danger of importing brood diseases. Any violation of this ordinance is punishable by fine or imprisonment, or both.

A. F. Wagner,
Inspector of Apiaries of Imperial Co., Cal.

El Centro, Cal., Jan. 15.

Clusters Hanging Clear to the Bottom-board in a Temperature of 19° below Zero.

I am afraid that a good many bees have "gone the route." One man I know, who will not spend a dollar for a bee-journal, lost eight stands of bees early in the fall. They all starved to death.

I winter my colonies on their summer stands. They are still all right. The clusters are hanging clear to the bottom-board. Yesterday morning it was 19 degrees below zero.

Plattsmouth, Neb., Jan. 8. J. Nielson.

Why did the Bees Destroy their Own Queen-cell Cups?

I had a colony last spring. While I was looking through it I found five queen-cell cups partially built, and just laid in by the queen. About a week later I went with a new hive, with the intention of dividing, but there was not a cell to be found. I wonder what had become of those cups or partly built cells.

Filer, Idaho. Louis A. Barbezat.

[Is it not probable that a swarm had issued meanwhile?—Ed.]

Something Needed to Kill the Grass.

What the bee-men want in this part of the country is some way to kill out the grass and weeds among the hives so that the mountain or brush fires will not destroy whole apiaries as they have done this year.

San Marcos, Cal., Jan. 9. G. F. Merriam.

Our Homes

A. I. ROOT

Wist ye not that I must be about my Father's business?—LUKE 2:49.

Rejoice and be glad, O daughter of Edom.—LAMENTATIONS 4:21.

Rejoice in that day, and leap for joy.—LUKE 6:23.

I have several times remarked that my chickens at times talk by actions almost as plainly as words, or sometimes even plainer; but it was a lesson and a revelation when, a few days ago, a dog not only talked to me but he preached to me a most wonderful sermon — the sermon I am going to try to give you this beautiful morning on the second day of the new year. I have read many wonderful stories of canine sagacity, but many of them I did not believe; and I am frank to say that, had I not seen it with my own eyes, I fear I should be loath to credit what I am going to tell you.

I was sitting at my typewriter, as I am now, when a strange dog came trotting up the cement walk. Supposing him to be a tramp dog that was probably hungry, and that would likely hang around if we fed him, I was about to drive him away as gently as I could, for he seemed after all to be a nice-looking dog. I went toward the screen door just as he came up opposite on the outside. Before I opened my mouth to speak, however, I paused, because of his bright look of intelligence. He was a beautiful shepherd dog, and his appealing look at once attracted my sympathy as well as curiosity. As soon as he saw he had my attention, he turned partly around and looked toward the gate and then again at me. Following his look I was startled to find one cow partly through the open gate, and another inside greedily grabbing the luxuriant bright-green Bermuda grass. When he saw I had taken in the condition of things he made a quick jump toward the cows and gate, then turned back as if waiting permission from me to drive the cows back. Of course I said at once, "You are a real good doggie, and I shall be very glad to have you drive them out; and I am everlastingly obliged to you for having so kindly taken an interest in my property and my premises."

Now listen while I tell you how he managed it. He could not do any thing with the cow that was rapidly getting further and further into the yard until he first got the other cow out of the gateway, where she seemed bound to "hold the fort." Accordingly he first tackled her, and with much skill and good judgment crowded her back, clear out of the way. Then he went for the other cow, kept her out of the shrubbery, and, after he had driven her safely outside, came up to me for a word of praise for doing so skillfully what very much needed to be done. After I had given him a good patting on the head, and called him repeatedly "good doggie," he hurried off through the gate and was off, as if he felt he had, perhaps, delayed some important errand.

A few days later, while a drove of town cows were passing he came in again to give us warning. The gate was again unhooked, and was open a little way. This time Mrs. Root was present, and she said the dog should be rewarded for repeatedly rebuking us for our own carelessness. But he was bounding off again just as she succeeded in throwing a piece a biscuit toward him. At first he acted as if he had not time to come back and get it; but finally deciding it would hardly be courtesy to a lady he came back, picked it up, and started on again. He did not stop to eat it, but kept it in his mouth; and when she threw him a second piece he looked at it a minute, and then seemed to decide he must not waste any more time, and was off with big bounds. At present writing I have not been able to decide who is the owner of this remarkable dog that seems to be looking after the affairs of mankind in general.

At the risk of having some of you think me irreverent, I am going to confess that this dog made me think of the first of our texts to-day; but I would put it this way: When he decided he could not stop to come back for the second piece of bread, he had in his sagacious mind "Wist ye not I must be about my *master's* business?"

Well, the above is, at least to me, surprising; but it is not all of "my dog story." Some time afterward I stopped to leave a package at the express office up town. As I had to go to the grocery, the bank, the drugstore, postoffice, and other errands, my mind was busy for fear I should forget something. By the way, let me tell you I am getting bravely over my forgetfulness. I can now attend to half a dozen errands or more, and not forget any of them. Wonderful, isn't it? Now listen: Ever since I commenced going without a regular supper, and eating only apples, my memory has been constantly improving. In other words, I was losing my memory and getting old prematurely just because of eating *three* meals a day when *two* were a great plenty.

Well, on that morning, when I was rushing out of the express office because I had left my auto-engine running, a strange dog kept getting in my way. He danced up and down, ran before and behind me, and nearly jumped over my head while he gave voice to sharp quick barks of joy and animation—bow, *wow*, wow! Just as I began to say to myself, "Why, what makes that dog act so strange?" I took a good look at him, and, behold, it was my shepherd-dog friend. He was appealing and pleading for just one word of recognition and a pat on the head, and to be called "good doggie" once more from some one he had in past time served.

Do you see the point of this *dog* sermon? Now, when I had stopped to talk with him

and assure him I had *not* forgotten my faithful and devoted friend, his joy and gladness seemed to know no bounds. His joyous attitude over just a little kind recognition has been a rebuke to me ever since. And, by the way, is there anywhere else in the round of the whole animated creation such an exemplification of the text as a happy dog? "Rejoice and be glad." Had not a lot of us (we who are professing Christians, for instance) better take a pattern after a well-fed and well-trained dog? Are there not others than dogs who are literally hungry for a word of recognition, sympathy, or encouragement? perhaps some have done you important service in times past, and you have been so busy you have forgotten all about it.

This dog might have said truthfully to the bystanders who wondered to see the dog single *me* out from all the rest, "Why, Mr. Root and I both belong to the same church, and our delight is to serve all humanity wherever our services may most be needed."

Once more, are we rejoicing and being glad as we might be and ought to be? Have we not just as good a right to be glad as our canine friends? and have we not as much reason to be glad *every day* of our lives?

Belonging to the same church reminds me of an incident of years ago. A profane and drinking man was in the habit of swearing and blaspheming on the streets when a little under the influence of drink, and in this way he would often collect quite a crowd just to hear him swear. As nobody seemed to want to interfere (for he was a tough character), he seemed to be getting worse; and one day I decided I would try to stop him; and if I failed I intended to appeal to the authorities. I came up behind his back, and the crowd began to snicker as they looked toward where I stood, expecting, doubtless, to see more fun. He finally turned and faced me, and stopped entirely in his harangue. Some one said, "Why, Dave, what made you stop all at once when you saw Mr. Root was in the crowd?"

"Why, boys, I stopped because brother Root and *I* both belong to the same church."

The idea that the speaker ever belonged to *any* church, or *could* belong to any church, caused an uproar of merriment; and, if I recall correctly, I pushed forward and took his hand and called on all present to witness that David had confessed before the crowd that he belonged to the church of Jesus Christ. He was sober enough so he remembered what he had said, and it paved the way for several talks with him, the outcome of which was that he promised to stop drinking and swearing, for a time at least, and promised me he would come to me and give me notice *before* he drank another drop. For a year or more he was a sober man, saved his money, and cared for his family; and people began to hope he was a changed man for good. Finally he came to me, reminding me he had kept his promise so far, but, for certain reasons, he had decided to go back, partly, to his old habits. I reasoned, begged, and implored, but to no avail. I finally urged the needs of his family. Said I, "Mr. H., you have more money now than you used to have?"

"Yes," admitted he, as he took out of his pocket a great handful of silver, "I have a little more money; but on the whole I think I will try a little drink for a while."

I did not know then, but I found out later, that during his hard drinking he had incurred a disease that is not easily managed, and Satan had put it into the head of this poor lost soul, ruined both in mind and body, that his forced abstinence was what made him feel so badly, and that a little drink *occasionally* would bring back his old former self. Poor deluded man! the drink only aggravated the trouble; and not long after, when I met him on the street his former jovial manner was all gone, and he told me he was near to death's door. He had scraped up a little money from friends, and was going *alone* to the city to see if any of the great doctors could give him any help. My conscience troubles me now to think that, if I had given a little more encouragement when he had done so well (like the shepherd dog), he might have tided over Satan's temptation, lived for years, and died a Christian after all. "Be ye not weary in well doing, for in due time ye shall reap if ye faint not."

PUMPKIN PIE AS AN ARTICLE OF DIET, FROM AS HIGH AN AUTHORITY AS DR. H. W. WILEY.

Our readers may recall that I questioned whether pumpkin pie is, as a rule, to be recommended as an article of diet. Well, our good friend Neal submitted the matter to Dr. Wiley, our United States Chemist. Below is what friend Neal says, and under it is the letter from Dr. Wiley.

In GLEANINGS for Aug. 1, 1910, A. I. Root throws mud at my eating pumpkin pies. Now, he can throw mud at my eating pumpkin pies, all he wants to, and it will be all right. However, the doctors claim that fat meat or lard is easy to digest, something like apples. Fat meat is an injury when burnt; however, as the lard content of pumpkin pies is doubtless what Mr. A. I. Root objects to, I think pumpkin pies should be all right. I have Dr. Wiley's opinion on the matter. I hope you may publish his letter, as I know of no better aid to eating lots of honey than squash or pumpkin pies.

Jonesboro, Ind. C. A. NEAL.

Mr. C. A. Neal:—I have your letter of the 3d instant in relation to the wholesomeness of pumpkin pie, and your reference to the opinion of Mr. Root that it is unwholesome. I am not competent to decide opinions of this kind respecting the wholesomeness and unwholesomeness, as a great deal depends on the individual. Foods that are often well relished and well digested by some persons will be rejected and regarded as injurious by others. Personally I am very fond of pumpkin pie, and have eaten a great many in my time, and hope I shall live to eat a great many more.

Washington, D. C. H. W. WILEY.

SOY BEANS IN OHIO.

I notice you mention soy beans in GLEANINGS. I have been growing them for three years. This year I thrashed about 100 bushels from 3½ acres. I think I have a very fine strain of medium green. If they are as valuable as you claim, I can raise many pounds of "beef scraps" to the acre. I like the coffee made from the early varieties.

Baltic, O., Oct. 21. JACOB MCQUEEN.

OPIUM, MORPHINE, COCAINE, ETC.; A WARNING.

I have been a reader of GLEANINGS for about twenty years, and I do not remember seeing in A. I. Root's department any warning in regard to the use of powerful drugs such as opium and its products (morphine being the most common), chloral, and cocaine. As the use of such comforting drugs has grown to great proportions, both by evil persons and also by well-to-do and well-meaning persons who do not exercise enough care, I thought a little warning and perhaps help to some who have come under their binding power would be good.

The subject has been brought to my mind again strongly, because a very good woman of a little over fifty has just been taken to an asylum because of insanity caused by the use of morphine given by her husband who is a doctor; another is much used up by the excessive use of a nerve medicine which included chloral given by her doctor. She was taking six different kinds in two doses. I happened to see the prescriptions. Another whom I know has spent a *whole farm* for help since the doctor caused her to get the morphine habit. The doctor has the farm and she has the habit.

I am fifty years old, and took opium (in the form of laudanum) fifteen years. I took it for chronic looseness of the bowels. I was careful not to use much, and thought I would not acquire the habit; but after years of use I found I was almost a complete wreck. I could not digest any thing but two tablespoonfuls of the very mildest food, and could not sit up. My doctor was not to blame for my *commencing*, but said I could not stop. Finally, when I was so weak, we consulted another doctor. He said, "Take five drops less; then in five days take five less again, and so on till you are down to none." I took about sixty drops at two o'clock at night, and there was about two drops in a teaspoonful of nerve tonic that the doctor made for me. It was hard work cutting it down, but it could be done, and *was* done, and it is ten years now since I did it. I am not over the effects yet, but can now eat any thing in moderation; bowels are in perfect condition.

Opium is a terrible master. Don't take it. Use other means. I could have done without it and saved myself a lot of terrible suffering. And don't permit any doctor to give you cocaine. It is far worse than opium, and it is, as I said, a terrible master. One of the brightest and most skillful dentists we had in Pottstown became addicted to its use, and died in the very prime of life, unable to free himself of it.

I think coffee and the medicines having caffeine in them prepare the nerves for neuralgia. That is my plague now, and I think it is a result of migrain tablets for the relief of headache. Water has been a great help, drinking it night and day.

Pottstown, Pa. W. W. KULP.

I heartily endorse all friend Kulp says in the above. In fact, I mentioned some time ago an experience with morphine, taken in a "cholera cure" medicine for chronic dysentery. Since using nothing but apples for my supper I have been entirely free from all troubles with digestion.—A. I. R.

THE WONDERBERRY UP TO DATE.

When the *Rural New-Yorker* made such a stir about offering the wonderberry as a "new creation," some scientific man, either in Washington or over in England, decided quite positively that it would be likely to send out sports that would produce poisonous berries. In reply to this, some of the defenders of the berries made fun of this assertion. The following clipping from the Detroit *Free Press*, sent us by one of our subscribers, would seem to show that it was not such a joking matter after all:

"WONDERBERRIES" MAY CAUSE DEATH; THREE MYSTERIOUS CASES OF POISONING AT LEONIDAS ATTRIBUTED TO FRUIT.

Mr. and Mrs. Michael Stealman, of Leonidas, are in a critical condition from eating "wonderberries" from a bush owned by William Merritt, of that village, who recently died under mysterious circumstances.

The old couple, both nearly 70, ate the berries furnished by a neighbor, and this morning both were found unconscious on their bedroom floor, where they had lain all night. They are still in a state of coma, and not likely to recover.

It is now believed that Merritt, who died while on his way to a Marshall doctor to have his case diagnosed, died from the same cause.

Battle Creek, Mich., August 16.

THE "WONDERFUL DISCOVERY."

Mr. A. I. Root:—"Another wonderful discovery in the chicken business," in Oct. 15th GLEANINGS, interests me. I like to read your poultry department, and value it more than any poultry paper I take, although I do not take much stock in some of your wonderful discoveries. "There is more in the feed than in the breed of the hog." I find that, when I forget to feed my hens at night, the egg-basket is not so full the next night; also when I change from soft mash to dry feed there will be a falling-off in eggs. My hens are moulting now; and the same hens that laid nearly every day a few weeks ago are now laying one or two eggs a week. I have learned a few things. One is, you can not *make* a hen lay if she does not want to; another is, there is no use in trying to make a chicken live when it wants to die.

Factoryville, Pa., Oct. 25. EARL SEAMANS.

"FORECASTING" THE LAYERS; TWO EGGS IN ONE DAY, ETC.

Mr. A. I. Root:—The following is an egg-laying report:

Last winter our one pen of 24 Silver Comb White Leghorn pullets started laying during November. I trap-nested them during the months of December, January, February, March, and April, so as to be able to hatch eggs from our best layers during the spring. I found no regularity as to their laying; in fact, one pullet laid two eggs in one day on two different days (that is, four eggs in two days), and another pullet laid two eggs in one day. Our hens were well fed, well housed, and well taken care of. They averaged, for the months mentioned, 19.5 eggs per bird per month.

Red Wing, Minn., Nov. 13. E. A. LINDELL.

HENS THAT LAY TWO EGGS IN ONE DAY.

I have known hens that lay two eggs in one day—that is, one very early in the morning and another late in the afternoon, then another the next day about noon.

I have had Indian Runner ducks several years. They are great frog-eaters, and great layers in the spring and summer; but they do not lay in the fall or winter. Mine make nests in the brush about my pond, or near it. At one time one made a nest and hatched some ducks under a hive of bees. I find that these ducks very rarely drop eggs promiscuously, for they practically always lay eggs in a nest.

Carlton, Colo. JAS. H. WING.

Kind Words From Our Customers.

OUT OF DARKNESS AND INTO THE LIGHT.

Mr. Root:—I wish I could meet you once, for you have saved me from a drunkard's life and from many other bad things. You have also taught me a lot about poultry, gardening, and health; and I have thanked the Lord, too, that I have learned to do right. I also thank you very much for writing so many good things in GLEANINGS. I will let you know of my experience, and how you helped me to be a different man in life.

This spring I was married to a nice bright farmer girl, 19 years old. I am 23. I took your advice to get married and start young. Of course it cost me something, for I am doing big farming; but with the help of the Lord I shall get out of debt. Then I am going to work to find a little place of my own, so I can raise fruit and poultry. I have a few colonies of bees for health and pleasure, besides running a 160-acre farm. I read many farm and poul-

try journals, also the Bible, and they all do me good. I also read T. B. Terry's health book.

The farmers here are mostly Germans. They drink, smoke, and chew tobacco. I soon fell into the same habits. I was getting to be a real drunkard. I also got drunk sometimes, and received some hard knocks. I did not care what I did. I also smoked and chewed, but still supported my good mother, for that is one thing I did not neglect. I never was a very strong boy, so my health was beginning to fail. But it was just then that I commenced reading GLEANINGS and your health notes. I soon found that fresh air is the best thing for me to sleep in at night, as I had a kind of lung fever. I also read your temperance talks, and found out that hard drink was the cause of my poor health. I was also having some sad experience in the way of drinking, so I thought I would put a stop to it, and I did so. I soon found, after leaving whisky alone, that my health was improving, and now I am as well as any young man, and I am living happy with my young wife, whom *I soon fell in love with* after I let drink and other bad practices alone. The experience I had with drink was this: Whenever I went to help my neighbors shell corn, thrash, or do other things, they would give me all the drink I wanted, and thus many of us got drunk. When night came I would go home weak and sick. I always thought the *work* tired me out; but it was the drink. I can now go home as fresh as I started, after a hard day's work at my neighbor's; and there are many others who are learning from me now. You don't know how much I thank you for your good talks in GLEANINGS.

Elk Creek, Neb., Nov. 2. E. C. ULRICH.

[May the Lord be praised, friend U., for the good news you tell us in your kind letter. What you say about your good wife reminds me of a beautiful book that is almost worth its weight in gold. The title is, "Fell in Love with his Wife." It was written by E. P. Roe. Mrs. Root and I read it years ago, and we have both very much enjoyed reading it again. You can get it of Sears, Roebuck & Co., Chicago, for 33 cents. God grant that you may continue to "fall in love" with the dear woman more and more every year that God permits you to live together.—A. I. R.]

HOW A MAN WITH ELEVEN CHILDREN "MADE GOOD."

I like GLEANINGS very much, and I thank God for your fearless denunciation of evil, and your kindly advice to the erring.

I am much interested in W. S. Cohenour's letter, p. 639, Oct. 15, as it sets forth the condition I was in myself, twelve years ago. With a large family to support, and keen competition in my trade, it was like making two bites of a cherry. This was in old Ontario, so we gathered our little all and moved to this land of promise, New Ontario, Thunder Bay District, 15 miles from Fort William. On arriving here 12 years ago, the 20th of Oct., 1899, I had only $18.00 left to face a winter and buy food and clothing for a family of eight, besides buying all feed for four horses and nine head of cattle for two winters. The only milk cow among these died in the spring, and my finest horse died the following fall. I gave another horse away for lack of feed, so was left with a very unevenly matched team (a heavy mare and a two-year-old bronco). We settled on an absolutely wild farm. Now for results: There have been five added to our family. The eldest is now a qualified grain inspector, holding a steady position, with a home of his own, paid for, in the city. The next three are schoolteachers with salaries ranging from $450 to $525; the rest are smaller, but all aiming in the same direction. We have 80 acres under cultivation, farms well fenced, good buildings, barn 40 x 100 feet, house 20 x 28, with kitchen 12 x 34; cement cellar and cement walks; rural telephone in the house, communication with neighbors and the twin cities (Fort William and Port Arthur). I have laid out over $1400 in vehicles and implements. My farm stock has not diminished, and yesterday I put in the cellar 84 colonies of bees. I was 39 years of age when we came up here. We all rolled up our sleeves and went at it—I at my trade (plastering), and my good wife, boys, and girls doing their best on the farm at home.

Now, if I were an American, as is Mr. Cohenour, instead of soliciting charity from the millionaires I would strike Mr. Roosevelt for a bonus for the fine large family.

I hope to see this man succeed, as I see that he says as I do, "Owe no man any thing."

As poultry seems to be what he aims at, I might quote prices here. From 25 cts. in spring and early summer to 60 cts. in winter. The demand for fresh eggs far exceeds the supply.

State River, New Ont., Can. JAS. M. MUNRO.

IS 75, BUT NO BEER NOR TOBACCO.

In reply to yours of Sept. 11, 1911, I would say that I have been a subscriber to your paper for many years—nearly twenty, I think. I have owned bees for sixty years with the exception of two years while in Nebraska. I value GLEANINGS highly, and don't know that I have any suggestions to make, realizing that it is managed by men who know a great deal more about the bee business than I do; and when I tell you that I am in my seventy-fifth year, and never drank a glass of beer nor a glass of alcoholic liquor except once (and that during a terrible pain in sickness), and never drew a whiff on a pipe or cigar, and never put any tobacco in my mouth, you can imagine how highly I value A. I. Root's Home talks and the stand he takes on temperance.

I am pretty much discouraged in the bee business. For three years in succession I have had hundreds of pounds of honey-dew, and have lost most of my bees from it during the winter. I don't like to sell the black stuff; and whether it is a secretion or an excretion I don't want to eat it.

Athol, Mass., Oct. 23. A. M. V. HAGER.

"FORECASTING" LENGTH OF LIFE BY ONE 89 YEARS OLD.

I have been reading GLEANINGS for a long time. Some years ago, when you were teaching how to live to be one hundred years old, you said all who wanted to go along should "fall into the procession." I said, "All right, I will go with you, not for a hundred, but for ninety." I shall be 89 the 17th of November. I am well and hearty for my age. I ride over my farm on horseback. I go to town, three miles, in my buggy, every few days. I superintend all my affairs. I keep busy—so busy that disease can hardly get in.

Now, you may ask, how I do live. I aim to live moderately—not excessive in any thing. Moderation is the word I keep before me. I eat a little of almost every thing placed before me; but I eat moderately. I eat a little meat when I get hungry for it, but I often do without it for a week or more at a time. A boiled egg, a glass of milk, stewed fruit, apples mainly, and a biscuit make up my daily meals.

Tell me the manner of a man's life and I can reckon pretty close to the length of it. The manner of life and the length of it keep pretty close together. The young, many of them, go down from 18 to 30; others from 30 to 60, when, by a proper manner of living, they could reach the alloted threescore and ten. I think I shall reach 90, although a little feeble, and I hope you may go there and beyond.

Your Home papers are doing good. Keep them going, for the uplift of our people. This is a long letter for an old man; but I wanted to say what I have, and more.

Nicholasville, Ky., Oct. 30. H. C. HERSPERGER.

A "HIGH-PRESSURE" A KIND WORD.

I received your letter telling me you would drop my name if I didn't renew my subscription at once; so I am aiming not to be dropped out of the finest class of people on earth, beceause I fully believe that they are the Gleanings family, Gleanings is one of the purest ahd cleanest of all the reading matter I have ever subscribed for. It is so straight against the evil, and so strong against it in every torm, that it makes me love its pages. May god bless you all in your good work, and especially the dear old A. I. whose talks have done us so much good. You will find enclosed $1.00 for the book I want, and Gleanings one year.

Jellico, Tenn. C. WALKER.

THE OLD-FASHIONED RELIGION.

We always plan to read what A. I. Root says in the Home papers, Sunday evenings, as we are on a farm, and find it difficult to get to evening service. We endorse every word he says, and it does us good to know there are a few yet who hold to the old-fashioned religion.

Neenah, Wis., Oct. 16. MRS. J. B. BLAKELY.